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ABSTRACT

This booklet reviews the development and implementation of population education programs in the Philippines. Section one describes the Population Education Program (PEP), a national program sponsored by the Philippine Department of Education and UNESCO. PEP's goals are to develop curriculum, train teachers, and encourage research for population education in colleges as well as in elementary and secondary schools. Section two outlines the functions of the Research Utilization Program of the Philippine Population Center Foundation. The program facilitates the application of biomedical, educational, and social scientific research to policy and practice. The main section of the report describes six different programs in terms of development and evaluation of materials for in-school population education. One program is the PEP; four others, sponsored by Filipino institutions of higher education, develop materials for elementary and secondary schools; and one program was initiated in a grade school. The in-depth discussion of the six programs covers problems of teacher training, parent attitudes, curriculum content at various grade levels, teaching strategies, and evaluation and revision of materials. Concluding sections provide abstracts of 17 resources on population education and a bibliography of approximately 50 citations. (AV)

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Population Education Research Utilization
Monograph Series 1 Part 1
May 1976

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THE PHILIPPINE EXPERIENCE IN CURRICULUM DEVELOPMENT FOR POPULATION EDUCATION:

THE STATE OF THE ART

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The Population Education Program

The population education effort in the Philippines was started in an attempt to involved the schools in the solution of the population problem. Even before the population education program was established, the National Population Program had involved various agencies and organizations in the country to undertake family planning IEC activities to help couples who want to limit or space their children. Majority of these population and family planning activities were directed at married couples. the young who would be parents of the future were largely ignored.

If the objective of the population program is to inculcate change in the fertility behavior of people, then a long-term measure directed towards the development of attitudes and rational behavior among the people toward a small family norm is called for. Changing attitudes and behavior which have been rooted in culture and traditions is a lifetime process. This is where the school as the nation's foremost educative agency can take an active role. Through the inclusion of population studies in the curriculum, schools are expected to develop in children and youth knowledge, attitudes, skills, and understanding necessary to enable them to make rational and responsible decisions regarding their fertility behavior and other population matters.

To carry this out, the Population Education Program of the Department of Education and Culture was organized to undertake a systematic and deliberate effort to involve schools in the population education of individuals. The PEP has defined population education as: "the process of developing awareness and understanding of population situations as well as a rational attitude and behavior toward those situations for the attainment of quality life for the individual, the family, the community, the nation, and the world."

To help the student appreciate the consequences of population dynamics in his immediate and remote environment and the implications of rapid population growth, the program developed a curriculum which covers the following content areas: demography, determinants and consequences of population

growth, sexuality and human reproduction, family planning, and planning for the future.

Considering the importance of educating the young in the facts of population change, population education is introduced in all grade levels from grade one to high school and in the college level, specifically in the teacher training institutions and in the arts and science courses. The population education program has also thought it wise to introduce population concepts through unit integration or permeation into five mother subjects in both elementary and secondary schools, i.e., social studies, science, health, home economics, and mathematics.

The establishment of other institutions engaged in introducing population education in the schools led the Department of Education to organize the Population Education Program in 1972 as a coordinating agency for population activities in the country.

The long-range expectations of the program are as follows:

1. The Philippine family size norm will be reduced.
2. Decisions made by Filipinos on population matters at both the personal and social levels will be more responsible.
3. The education program provided to students will be more relevant to their felt needs.

Its specific objectives are:

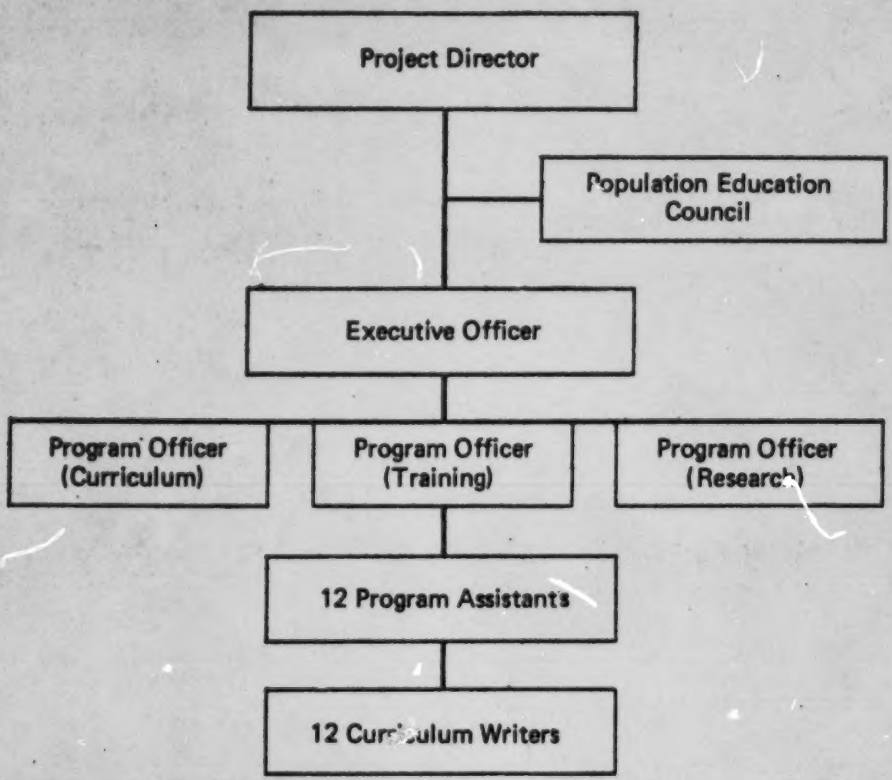
1. To provide instruction on population education to students of the three target levels by training 186,000 elementary teachers, 15,600 secondary teachers, and 360 teacher-training instructors in the country to implement the designed courses.
2. To develop curriculum materials for population education content for elementary, secondary, and teacher-training levels.
3. To provide the necessary basis for more definite curricular changes in the formal school system in terms of content of approved textbooks, official syllabi, and other instructional materials for use in the elementary and secondary courses and in the pre-service and in-service education of teachers.

The Population Education Program receives financial assistance from the United Nations Fund for Population Activities (UNFPA).

Organizational Structure of PEP

The Population Education Program is directly under the Department of Education. The Secretary of Education serves as Project Director of the program. He is assisted by the program's Executive Officer, three Program Officers, twelve Program Assistants, and an administrative staff. An advisory board, the Population Education Council, ensures coordination among other agencies involved in population education and related population activities.

Organizational Structure of the Population Education Program



As the PEP table of organization shows, there are three main functions or components of the program – Curriculum Development, Training, and Research. Following are the details of each:

Curriculum Development

This unit/component is responsible for developing curriculum materials for all the educational levels – elementary, high school, normal schools, and colleges.

In the elementary and high school levels, the unit has developed curriculum subunits for particular grade levels and subject areas. The content of the curriculum materials on population education covers five main areas: demography or population dynamics, determinants of population growth, consequences of population growth, human sexuality, and planning for the future. The manner of introducing population education is a combination of the permeation and the unit method: subunits in population education were inserted into existing units in the syllabi of social studies, health, science, home economics, and mathematics. These subunits, consisting of lessons which take from several days to one or two weeks, are viewed as enrichment of these units that will accommodate them. To help teachers in teaching these subunits, the PEP Curriculum Development Unit has developed Teachers' Guides in Population Education and corresponding Background Information for Teachers. (BIT). These curriculum materials have undergone three revisions.

At the teacher training institutions, a population education syllabus has been developed for a 3-unit course, which is taught as a single elective course. This syllabus is in addition to a *Resource Book in Population Education for Teacher Education*, used by those who attend pre-service teacher training.

For other colleges and universities, curriculum materials have been prepared for the teaching of population education in the arts and sciences as a separate subject, as an integrated course, and as a seminar course.

The Unit has also started translating into Pilipino elementary level population education sub-units in social studies and health in the developed pupil materials on population education, and produced 30-minute TV programs on strategies used in teaching population education in the elementary and secondary levels.

Training

The training unit of PEP has prepared a five-year massive training program at three levels: (a) a five-week training course for 720 members of the elementary level supervisory training teams (STTs) who will train teachers; (b) a one-week training course to be conducted by the STTs who are given the responsibility to train 65% of the total elementary school teachers or 187,000 teachers and 20% of the total secondary school teachers (there are 15,600); and c) a five-week training course for 360 teacher training instructors who are expected to implement the designed courses in their schools.

The five-week training course of STT's is designed to provide the participants in-depth background knowledge in population and population education to be able to train teachers. The one-week training program for teachers is designed to equip teachers with the necessary knowledge, attitude, and skills in integrating population education.

As of August 1975, the PEP has conducted the last of the training programs for both elementary and secondary Supervisory Training Teams composed of 410 elementary and 29 secondary supervisors. The STTs have in turn held one-week training programs for 54,264 elementary school teachers; re-oriented trainors from five regions (VII-XI) in two seminar workshops; held the third summer training for college instructors totalling 215. It has also conducted orientation seminars for 250 division superintendents and regional directors in the national level, and another for 1,125 school heads and school superintendents at the regional level.

Research

The research program initiated by the Population Education Program has two principal components – basic or empirical research, which concerns the establishment of a requisite theoretical background, and evaluative research, which has sought to assess various aspects of program effectiveness.

In the area of empirical or basic research, the Research Unit has conducted several studies to provide baseline data for curriculum development and population education program planning to suit the needs and interests of the target audiences. Among these studies are:

a) A regional study in cultural socio-anthropology entitled "How Children Develop Concepts of Family Size."
b) "Family Size Preference Among Filipino Adolescents."
c) A study on fertility behavior of teacher trainees involved in training programs.
d) "Reactions of Parents, Teachers, and Laymen and Other Segments of Society Towards Certain Potentially Controversial Population Education Content."
e) Survey of Students' Knowledge of and Attitude on Population Matters in Tarlac and Pangasinan.

In the evaluative-practical area, the Research Unit has conducted regular evaluation of training programs both on the national and local levels. Instruments for the evaluation and tryout of curriculum materials have been prepared to secure feedback on the subunits as they are prepared.

The Research Utilization Program

The Population Education Research Utilization Project was designed and implemented by the Population Information Division (PID) of the Population Center Foundation, to test and set into motion the division's core program of research utilization.

The cluster of projects that come under the research utilization program seeks to upgrade the skills of population program professionals in biomedicine, population education, information-education-communication (IEC), and social science – by facilitating the application of research results to policy and practice. The target users are the four levels of professionals in the decision-making ladder, i.e., practitioners, administrators, policymakers, and researchers.

PID developed the Research Utilization Program to counter factors that tend to limit the application of research findings and technical information to policy and professional practice. These factors are:

1. *The flow of research results and other technical information from researchers to practitioners and policy planners is restricted by a number of bottlenecks.* Research results are seldom used by practitioners and policy planners because (a) research results seldom reach them; (b) if they do, they are not read; (c) even if they are read, they are seldom intelligible; (d) even if they are intelligible, they are seldom implementable, because the variables considered by the research are those which are not under the control of the practitioners or policymakers.

2. *Policy planners' and practitioners' problems are seldom the starting points of research.* Researchers seldom take policy planners' and practitioners' problems as the starting point for their studies, for the following reasons:
   - To the extent that many problems simply stem from the lack of resources, research is unnecessary.
   - Even where new information is needed, the action agency's self-monitoring and information-gathering capabilities often suf-

fice to retrieve or produce the information.

- Where the action agency tries to get researchers interested in its problems, researchers may find the problem trivial or uninteresting.

3. *Research utilization has to be linked with decision-making and innovations.* The communication and dissemination of research results is seldom planned to encourage the adoption of innovations in policy and practice. Research utilization involves the acceptance of new ideas and practices. Thus, it has to take into account the decision-making structure of action agencies. The adoption of innovations calls for not only the diffusion of information but also a conscious decision by individuals and organizations to adopt innovation. For some innovations, adoption decisions can be freely made by the adopting unit. For others, the decision to adopt is contingent on earlier enabling decisions done by someone in authority. For still others, adoption decisions are authority decisions that they simply have to obey. Adoption decisions may also be individual or collective. Given that research utilization involves the adoption of innovations and that the latitude one has in adopting innovations depends on one's position in the authority structure, the research utilization program has segmented the audience of population professionals into researchers, practitioners, administrators, and policy planners, in terms of these professionals' capacity to make adoption decisions.

The Program's Functions

The research utilization program encompasses four major functions:

Research Transformation – This involves the development of a policy- and practice-relevant state-of-the-art summation of scientific findings, based not only on a review of the literature but also on feedback from professionals in population.

Dissemination – The communication through print and electronic media of these scientific findings, as well as of case studies, to sub-audiences of population professionals.

Information retrieval – The collection, indexing, and abstracting of the research information – in print, film, or microform – to be transformed or disseminated.

Research – The conduct of research on the flow of scientific knowldge, needed to implement the basic research utilization strategy. Also, when the research transformation function warrants it, further analysis (secondary analysis) of research data collected by others.

The Cycle: Basic Program Unit

The basic unit of the Program is the *research utilization cycle*, which lasts from 12-18 months and covers information retrieval, research, research transformation, and dissemination on a problem or cluster of interrelated problems felt by action agencies. The strategies of research transformation and communication that have been used and are being explored for use in these projects are the following: (1) state-of-the-art summations of scientific findings based on literature reviews and field experience, combined with feedback conferences among different levels of professionals from which are derived recommendations for action and research; (2) problem-solving dialogues between and among these professionals on specific issues confronting the National Population Program; (3) self-instruction modules and how-to manuals which are products of research on content (e.g., latest research on IUD or IEC techniques) and methods of instruction or programming styles; (4) training of professionals in research utilization skills by means of modified programmed instruction modules; and (5) field consultations to facilitate and follow up on clients' efforts to set up their own systems to link research and practice. The products of these various activities are transformed into publications, such as monographs and newsletters, and audiovisual packages.

The Pilot

The Research Utilization strategy was pilot tested in population education. The decision was

made with full realization that population education is a relatively new component of the National Population Program. To the extent that population education is a new program, there is an urgent and great need for policy planners and administrators to seek "valid knowledge" from research and experience, to help them define their problems better, plan out more relevant projects, and evolve innovative strategies and practices which will effectively involve the schools in the solution of the population problem.

At present, the Population Education Program (PEP) of the Department of Education and Culture is engaged in a continuous process of curriculum revision. Since population education is such a new field, PEP believes it imperative that the curriculum has to continually alter to reflect new ideas from research and observation, on what should be taught and how it should be taught. The same is being done with the teacher training activities of PEP. To ensure the effective implementation of the population education program, the PEP is trying various alternative training models and strategies to determine which will be the most effective vehicle for delivering population education knowledge and teaching competencies to teachers in the field. Findings of research and the experience of other agencies and individuals involved in teacher training could definitely help in policy planning and practice.

Why PEP

Unlike in the other content areas of population – social sciences, IEC, and biomedicine – where there is a proliferation of disciplines and agencies with disparate programs to implement, the population education field has only one central body, the PEP of the Department of Education and Culture, which plans, implements, and coordinates population education activities in the whole country. Thus, the PEP has the authority and direct control over the teaching of population education in both public and private elementary and secondary schools, teacher training institutions, and colleges and universities. This organizational structure makes for fast and centralized introduction of policies and decisions on population education activities, in all levels and sectors. A Department Order or a memorandum issued by the Secretary of the Department of Education and Culture facilitates the transmission and implementation of these policies. This decision-making structure provided a clear entry point for PID's research utilization strategy.

There is another aspect of the population education program which lends itself to the PID research utilization strategy, and this is the distinctive delineation of population education professionals into the four research utilization target audiences, i.e., practitioners, administrators, policy planners, and researchers. In other population content areas, this is not so; the individuals who compose one level of the target audience belong to varied professions, and have multiple or less identifiable roles. In population education, roles are more homogenous and more easily identifiable: teachers are the practitioners, principals and supervisors are the administrators, and superintendents and the key staff of PEP are the policy planners. This being the case, the diffusion and application of innovations and research results are rendered easier.

THE PHILIPPINE EXPERIENCE IN CURRICULUM DEVELOPMENT FOR POPULATION EDUCATION:

THE STATE OF THE ART

This paper hopes to contribute to an effort essential in any innovative experience: the recording and analysis of the processes and problems involved; the alternative strategies considered; and the decision points arrived at by specific agencies and subsystems in the educational system. The ultimate goal is to have a large body of historical records that will contribute to the evidence upon which to build future and relevant curricula, instead of having to rely upon assumptions and suppositions of what might or might not work.

This monograph is the first of a three-part series on the theme "Appropriate Contents and Strategies for Curriculum Development in Population Education". It incorporates the background paper discussed and the subsequent reactions and recommendations of the three levels of participants – teachers, supervisors, researchers and policy planners – in the research utilization conferences on population education held April-June, 1975 by the Population Information Division of the Population Center Foundation and the Population Education Program of the Department of Education and Culture.[1]

The present Philippine experience in this field, specifically in the development, evaluation and revision of materials for in-school population education, is defined by the efforts of the following:

1. The national Population Education Program (PEP) under the Department of Education and Culture;
2. The Population Education Center (PEC) of the Philippine Women's University;
3. The Wesleyan Population Center (WPC) of the Philippine Wesleyan College;
4. The Science Education Center (SEC) of the University of the Philippines;
5. The Dansalan College; and

6. The De La Salle Grade Schools.[2]

This paper does not try to judge or evaluate the pioneering efforts of these institutions. After all, population education is still a relatively new but promising field of study. Instead, the paper describes their experiences as cases or models upon which to build, if possible, better curricula in the future. It reviews these experiences – the decisions made among available alternatives at a given time, the "pros" and "cons" of these decisions, and the analytic discussion they elicited among selected teachers, supervisors, researchers and policy planners.

In the Philippines, population education began four years ago when the Adult and Community Education Division of the Bureau of Public Schools (BPS) conducted the first workshop on Curriculum Development for Population Education.

This monograph also hopes to contribute to an effort considered essential in any innovative experience, in this case, the curriculum reform movement in population education: the recording and analysis of the processes and problems involved; the alternative strategies considered; and the decision points arrived at by specific agencies and subsystems in the educational system. The ultimate goal of this movement is to have a large body of historical records that will contribute to the evidence upon which to build future and relevant curricula, instead of having to rely upon assumptions and suppositions of what might or might not work.

Background

Population education is a new field, the newest innovation in the school system. Curriculum development in this area seeks to fill the need for "relevant" curricula that can present knowledge, not just for its own sake, but in terms of its potential role in social action. As an acknowledged expert in the field puts it, "instead of teaching certainty, as if all that we need to know were known, (such curricula) assist the learner to prepare for the uncertainties of the future." (Viederman, 1975)

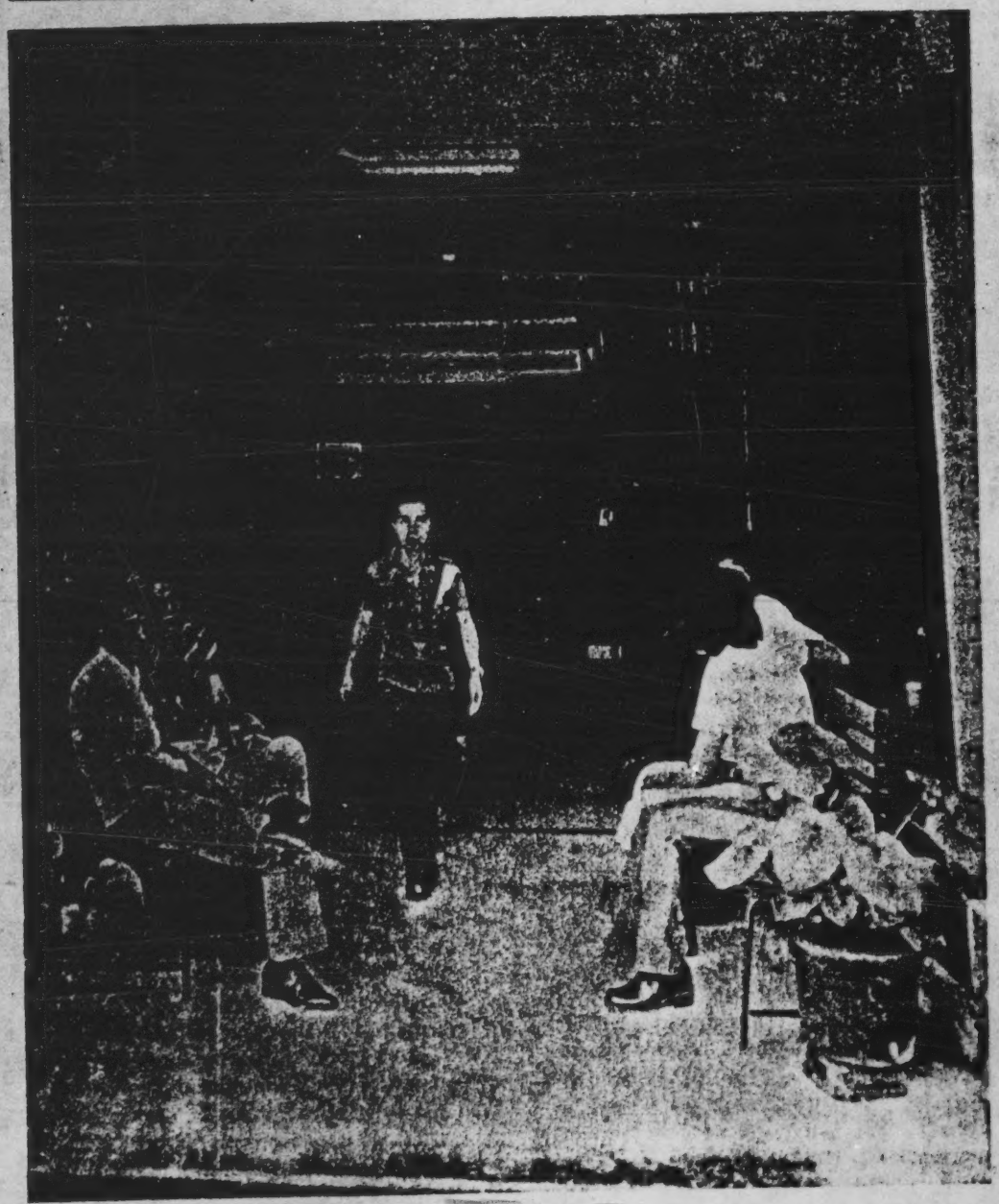
In fact, there is still no fully operational population education program that is diffused and cuts across all levels of the educational system. The PEP Curriculum Guides from Grade 1 to fourth year high school are not targetted for full nationwide use until 1977. That there is also no universally accepted formal definition as yet of population education further attests to its infancy.[3]

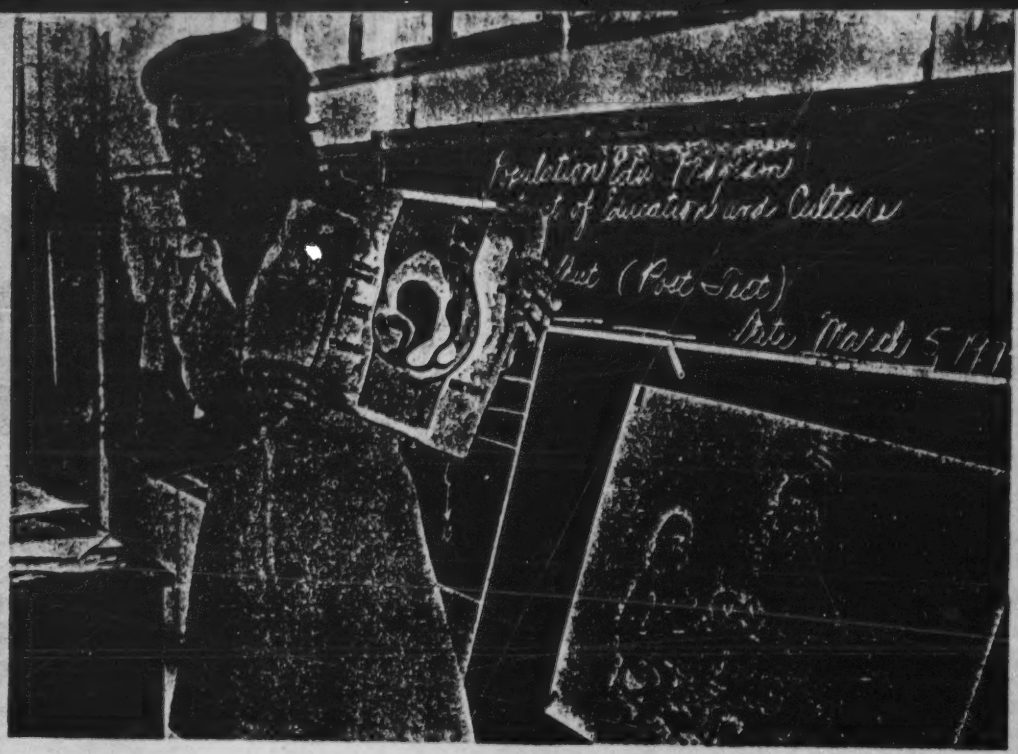
While the pioneers in the field were all Americans – Warren Thompson, Philip Hauser (who first urged the inclusion of population studies in the curricula of elementary and secondary schools), and Sloan Wayland (who first used the term "population education") – formal work had its beginnings among Asian developing countries, where population growth threatened to overcome economic progress. Among those were India, the Philippines, Iran Korea, Indonesia, Malaysia and Thailand.[4]

In the Philippines, population education began four years ago when the Adult and Community Education Division of the Bureau of Public Schools (BPS) conducted the first workshop on Curriculum Development for Population Education. Assistance came from the Colombo Plan Bureau, which also had a hand in conducting a similar workshop in Malaysia in 1971. The BPS workshop agreed on policies regarding general content statements, and when and how to introduce population education into the curriculum as a planned, integrated, and sequential program.

It was decided that population education should be integrated as sub-units into the four existing "mother" units of social studies, health, science and home economics[5] in the elementary and secondary levels. Only in teacher-training colleges (there were 15 such institutions that pioneered in population education courses) was it to be introduced as a single elective course (besides permeating several courses already existing).

Because of the magnitude of the task of implementation, the five-year Population Program (PEP) was finally established under the Department of Education and Culture in July 1972.



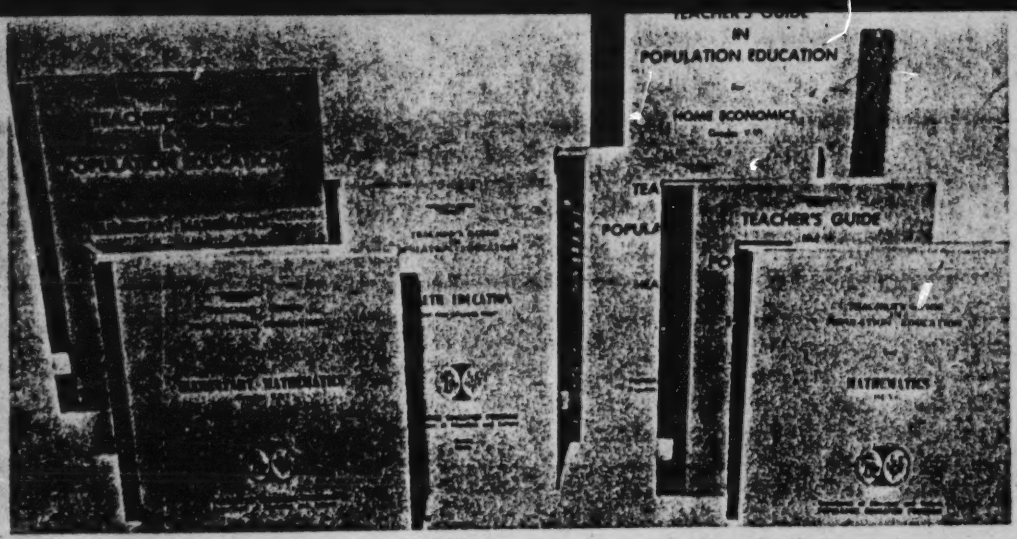


Population education in the Philippines enjoys diverse channels of delivery — from the private to the university-based, to the Department of Education national program — and themes — from the micro level (those which emphasize the personal and familial aspects of population changes, such as sex and family life education) to the macro level (those which cover demography and population change).

These developed teaching units were tried out in ten school divisions in the second semester of 1970-71. They were subsequently revised in another workshop conducted May-June 1971, and pilot-tested again in the selected divisions. Because of the magnitude of the task of implementation, the five-year Population Education Program (PEP) was finally established under the Department of Education and Culture in July 1972, with financial assistance from the UN Fund for Population Activities (UNFPA).

The other pioneers in preparing curriculum guides for population education are: Wesleyan Population Center of the Philippine Wesleyan College, which has been involved since 1970 in curriculum development for elementary, secondary and collegiate levels, with emphasis on population awareness; the Population Education Center of the Philippine Women's University, which has been undertaking curriculum preparation along the lines of family life and sex education; and the Science Education Center of the University of the Philippines, which has prepared, tested, and is now revising population education modules to be used in high school biology.

Population education in the Philippines enjoys diverse channels of delivery – from the private to the university-based, to the Department of Education national program – and themes – from the micro level (those which emphasize the personal and familial aspects of population education, such as sex and family life education) to the macro level (those which cover demography and population change).



The approach chosen by the PEP in introducing population education in the school curriculum was integration or infusion.

The PEP experience

In the development of a comprehensive population education program, three main projects were pursued: curriculum development, training and research. The general objective was to develop curriculum materials for elementary, secondary and collegiate levels, including a course in teacher-education and a prototype course in the arts and sciences. The ultimate aim was to institutionalize population education in the formal school system through official syllabi for courses and the content of approved textbooks.[6] For the elementary level, the PEP followed essentially the same approach of infusion or integration developed by the Bureau of Public Schools at the abovementioned workshops. Among the basic references used were curriculum guides drafted by the BPS and, selectively, those of the PWU and Wesleyan College.[7]

The infusion or integration approach

There are four essential arguments for the integration or infusion approach:

1. The already overcrowded curriculum that made new, discrete, self-contained single courses impracticable;
2. The feasibility of using the same teachers (one teacher, one-class set up) instead of hiring additional ones;
3. The assumption that content spread throughout the entire period of schooling would create more impact than a single one-shot course;[8]
4. The pre-existence of some population content in the five selected mother subjects, making them a good setting for teaching population education concepts without breaking the continuity of instruction.

The infusion approach to introduce population education materials in the curriculum has been unanimously affirmed by the conference participants[9] as the most suitable for elementary and high school.

According to Cayari,* the integration guidelines further drawn up by the participants are the same objectives used in preparing the PEP curriculum guides. These are:

1. Population education topics should enter naturally and logically into the mother subjects' objectives;
2. The teaching of population education should be well-ordered, systematic, or-

*References with asterisks refer to participants who attended the research utilization conferences. (See Appendix for complete list).

Alternatives to integration are the separate course taught for one term or one year, the mini-course which takes up one to four weeks of class time, the teacher-dependent course, and the self-instructional package.

Some Filipino Beliefs and Traditions
RPG and FOOD SUPPLY
A Self-Learning Unit in Population Education for Grade VI
MAN and Natural Resources
MIGRATION
RPG AND
MAN and His ENVIRONMENT

Even theoretically, the integration or infusion approach is not without its own problems. There is the danger of losing the logical sequence of content and proper articulation because of dependence of the subunit on the mother subject. Also, there are likely to be some content areas proper to population education which do not lend themselves to integration in the chosen subjects.

ganized, and gradated according to the different grade levels to prevent repetition;

3. The scope and logical sequence of population education itself as a discipline should be considered, and not only of the mother subject.

Even theoretically, the infusion approach has its own problems. There is the danger of losing the logical sequence of content and proper articulation because of dependence on the mother subject. Also, there are likely to be some content areas proper to population education which do not lend themselves to integration in the chosen subjects.

The majority of participants agree that the integration approach is now the most appropriate method of introducing population education. However, some educators look upon it only as a temporary though necessary measure, to be employed until such time that authors of textbooks and reference materials can be called upon to consciously integrate appropriate population-awareness materials into their writings, so that population education will cease to be regarded as "something special."[10]

Alternatives to Integration

The infusion approach, though, is only one of several methods of introducing population education into the curriculum.[11] The others are:

1. The separate course for population education taught for one term or one year (this is done in the country's teacher-training colleges where population education is treated just like any other 3-unit subject.) Its advantages, if used in the grade or high schools, are: sufficient time to attain some growth in all goals of population education; greater depth of study; and opportunities for the young to study their own sexuality, their physical and emotional needs and values, and explore alternative personal questions;
2. The "unit of study" or "mini-course", a series of related concepts integrated into a scheme taking up a total of roughly one to four weeks of class time;
3. The "teacher-dependent" course concept which requires that each teacher be given thorough training in population education and then encouraged to independently incorporate appropriate materials into his or her subject matter. This, of course, requires highly qualified and highly motivated teachers;
4. "Learning activity packages" (LAPS), commercially published or developed by teachers, which use the approach of individualized independent learning. The learner selects the learning activities he wants to use and paces his own involvement, with the teacher as guide. (Lane & Wileman)

Because of difficulties that the infusion approach entails, some participants favor these other methods and consider them suitable alternatives to the integration scheme.

Another reports that in her school, the approach was incidental insertion rather than continuous permeation of population concepts into the whole curriculum along a conceptual framework.

On the "teacher-dependent course," it is the consensus that the intensive training required to produce the unusually competent and motivated teachers needed would not be possible, taking into consideration limited time and and resources.

The health teachers particularly feel that separate course approach should be implemented in high school; teachers specializing in population education could then help the elementary school teachers integrate population

The separate course for high school is gaining more and more adherents.

education in the elementary grades, and be truly qualified to handle population education content.

Having a separate high school course in population education is a position that is gaining more and more adherents. Its proponents argue that the separate course is warranted by the population crisis, which is sufficiently serious to justify a direct, dramatically pinpointed course to develop the necessary commitment among students and teachers (and, for that matter, administrators, decision-makers and resource-allocators within the school system). In this way, they can respond to population issues that could otherwise be inconspicuous or get buried under the traditional mother disciplines.[12] The PEP plans to develop an elective population education course in high school under the revised secondary school program which now allots one hour per subject.

Some supervisors also suggest an alternative to the integration approach. They propose the addition of a new unit to every mother subject even if this means revising the whole curriculum and leaving out some relatively "unimportant" or "outmoded" topics since, according to them, population education is the most pressing subject of the times. They feel this could be done especially in social studies, which is now being restructured.

They add that funds should be directed to a re-examination of the curriculum rather than to the training of more trainers.

Dr. Estefania Aldaba-Lim, arguing for experimentation on a mini-course for population education, explains that such is the structure towards which the Philippine Women's University has been working. The PWU mini-course was designed as a one-year course attached to a regular course (any social science subject) to be given on the fifth day of the week. Secretary Lim favors the mini-course approach because she feels that the integration approach, where population education permeates five subjects, causes a watering-down of population education content.

Other subjects for integration

Some participants, moreover, feel that population concepts should enter other subjects aside from the existing mother units (social studies, science, mathematics, health and home economics).

The home economics teachers suggest that population education be integrated as well into reading, literature, and composition writing in both English and Pilipino. Health teachers suggest that it be integrated into English 1 to 6. The supervisors, on the other hand, would integrate into the communication arts, music, agricultural arts, and physical education classes. They feel, for example, that songs and poems could effectively communicate proper attitudes and values regarding population.

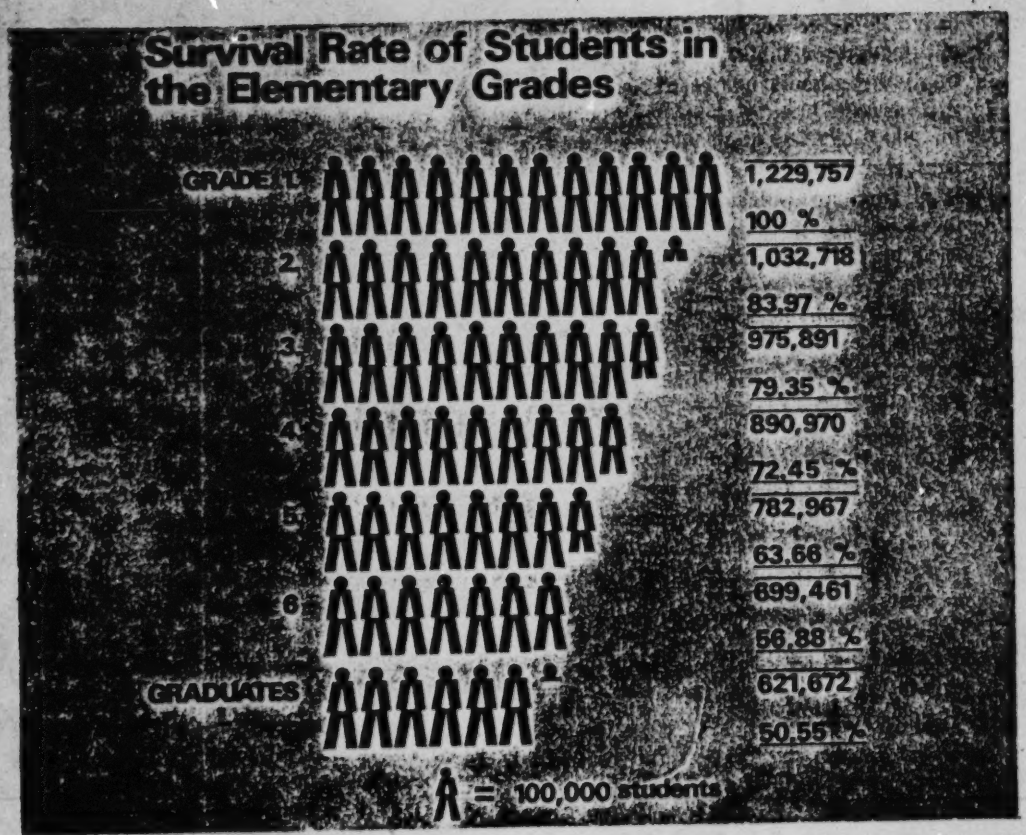
One cites articles on pollution as highly suited for integration into literature and reading subjects. A supervisor from the south recounts how he had persuaded an English reading teacher for Grades 5 and 6 to undertake a study on certain pro-natalist stereotypes and concepts perpetuated in reading stories and situations.

The researchers and policy planners, however, disagree almost unanimously with the idea of integrating population education into any more subjects. They explain this would result in "overkill", and would clutter up the curriculum.

Level at which to introduce population education

The PEP decided that population education should be introduced at the elementary, secondary and normal school levels in all public, private and vocational schools, starting from Grade 1.

Population education materials for the primary level tend to be descriptive and are directed towards developing an awareness of population change within the pupil's most immediate environment – the family and the com-



The introduction of population education was given priority in the primary level primarily because of the high dropout rate in the lower grades.

munity. Materials for the secondary level, on the other hand, are more analytical. They focus attention on causes and consequences of population change and possible societal and national individual action, extending the scope further to the national and global environment.[13]

Introducing population education in the primary level was given priority, affirming the PEP decision.

Those who argue for the primary level say the drop-out rate is of paramount importance: Johnston says 40 out of 100 students in Southeast Asia survive till Grade 5; only 12 out of 100 continue to high school. Furthermore, the drop-outs come from the lower socio-economic classes who "are destined to high fertility patterns of behavior."[14]

The teachers take this same view, thus affirming the PEP policy of introducing population education as early as Grade 1. They favor giving priority to the elementary level for the following reasons:

1. There is a high dropout rate after Grade 5 or Grade 6. A policy planner claims that drop-outs occur even earlier in the provinces (Eslao*);
2. The biggest enrolment is at this level;
3. Children develop attitudes early[15] and, as one group observed, are already very inquisitive and exposed to matters of sex at an early age. Thus, wholesome attitudes must also be developed in them

early. Home economics teachers point out that when children start asking questions, they should not be discouraged with answers like "You are too young for that," or "Wait until you reach the right age";

4. Pupils from the low-income group, where the tendency is towards big families, make up the bulk of elementary school pupils;
5. In rural communities, the average marrying age is early – usually after the elementary grades. These eligibles should therefore be reached before they leave elementary school;
6. In the rural areas, high school students usually leave for the city to work or to study; those who stay behind and remain in contact with their barrios are the elementary schoolers and elementary school graduates;
7. The current one-teacher, one-class setup allows for greater flexibility in integrating population education into the existing curriculum;
8. There are more teachers in the elementary level who can be tapped to teach population education.

As regards reason number three above, a PEP study, "Reactions of Parents and Teachers Regarding Some Potentially Controversial Content of Population Education," revealed that contrary to apprehensions of population educators, most of the parents and teachers favored the inclusion of "controversial topics" in the population education curriculum. Only 3% reacted unfavorably.

On the other hand, those who argue for giving priority to the secondary level cite a number of reasons for their stand. First, there is the complex and controversial character of materials for population education and the level of maturity required to understand them (Johnston and Poffenberger); second, the lack of compelling evidence on the retention of population literacy by the primary child (Viederman). Third, because it is the high school graduates who probably dominate society's future leaders, it would be wise to concentrate limited funds and personnel on them and leave the dropouts to out-of-school youth educators (Viederman and Wayland). And fourth, they cite the fact that secondary students are closer to the age of marriage, when they will be making their population decisions.[16]

The supervisors, researchers and policy planners are of still another view. They agree unanimously that population education should be integrated at all levels simultaneously – elementary, secondary, and college (including teacher-training colleges).

The supervisors, moreover, name a fourth group – the out-of-school youth – although the researchers and policy planners feel that this task should be left to community development agencies like the Department of Social Welfare, which has a program entitled Population Awareness and Sex Education (PASE), or the newly-established Department of Sports and Youth Development or other existing youth agencies, with all of which the PEP can coordinate. Representatives from the PEP, however, point out that the PEP is starting to develop plans for an out-of-school population education program with a research-based curriculum development component (Alberto*). Pilot plans are already being laid out for a model community in Dasmariñas, Cavite.

The supervisors give the following reasons to support their suggestion that population education be injected into the whole educational system:

1. The more change agents, linkers, or models, the better;
2. The magnitude of the population problem is such that waiting for the long-term effects of population education in today's elementary pupils may prove unwise;
3. This generalized approach will fill the need for continuity in population learning and fit into the current trend of "life-long education." The supervisors emphasize, however, that repetitiveness should be avoided. Instead, a spiral approach (i.e., introduction of increasingly complex content and strategies) should be employed.

An order of the Department of Education now allows any institution to offer a three-unit course in population education provided it has the qualified teachers.

The home economics, health and social studies supervisors feel that population education should be a requirement for graduation in high school, college and in technical vocational schools. They also feel it would be better if it is introduced in college as a separate single course.

The researchers and policy planners, however, comment that there should be greater flexibility in college. They cite three possible ways of introducing population education at this level: (a) as a one-unit course; (b) as a three-unit course; and (c) as integrated into the social science subjects. They generally consider the third option as unwise because it would either cause the fragmentation and watering-down of population education concepts (de la Cruz*, Espiritu*),or result in undue duplication and repetition of topics. Espiritu* cites the three-unit "catch-all" course at the University of the East, called "Current Issues", which pools all enrichment course requirements such as population education, land reform, taxation, drug education, etc. The University of the Philippines has a similar course called "Social Orientation".

Brought to the attention of the participants, a new Department order now allows any institution to offer a three-unit course in population education starting this schoolyear "provided it has the qualified teachers" (those trained by PEP or a similar agency). In this regard, the educational administrators in the group cite the need to reconcile this order (D.O. No. 27) with an earlier circular released in 1973-74 requiring a one-unit family planning course for graduation in any four-year degree course. The group thus recommends that this old circular be rescinded.

A college dean, moreover, expresses pessimism about the new order. He feels that its mild tone – it being not mandatory – and the current trend in colleges to lessen the number of units to the prescribed minimum of 124 could work against its effective implementation. Among students and their parents, in fact, the general feeling is for students to make only those courses required for graduation within the shortest possible time.

Because population education is a relatively new field of endeavor, no research has yet been conducted on the appropriateness of the level in which it should be introduced. In its curriculum development, however, the PEP has laid unifying groundwork for population education.

Content of the curriculum

Content is determined by two interrelated factors: the stated goals and objectives of the national program, and cultural and educational traditions of the country.

Curriculum writers, for lack of solid research and knowledge-base, have difficulty determining the conceptual framework and specific content for population education. It would have been extremely helpful if they were enlightened on the following topics:

1. The prevailing "folk demography" or socio-cultural characteristics of Philippine society, prior population learning of students, and knowledge, attitudes and practices of parents regarding population matters; for example, values of children, life aspirations which parents hold for their children or which children hold for themselves, ideal age at marriage, ideal family size;[17]
2. What and where students learn outside school – in the home, peer group, social clubs, mass media, church, civic organizations, etc.;
3. The proper function of the school in population education. For instance, should it address itself only to cognitive content and, therefore, the awareness and information function? Or should it include primarily affective content – the

The PEP defines population education as the "process of developing awareness and understanding of population situations as well as a rational attitude and behavior towards those situations for the attainment of quality of life for the individual, the family, the community, the nation, and the world."

motivation and behavior change function? (The latter becomes crucial with respect to the controversial value-laden content of the curriculum, such as terminology for sexual organs, contraception, etc.);[18]

4. The "hidden curriculum" that reinforces accepted social notions of family composition, size and other population-related concepts;
5. The question of what to introduce at which level;
6. The proper target audience – elementary, secondary or college students;
7. How to meet the needs of different segments of the target audience (rural and urban, males and females, and different ethnic and religious groups);
8. How to rationalize sequence of materials over increasing grade levels when these subunits are tied to or dependent on mother subjects;
9. The specific psychology of learning theories that are relevant to population learning.[19]

Expediency, more than any factor, earlier dictated the ensuing curriculum development process, which consisted of: (a) an inventory of population-related content already existing in current textbooks and curricula; (b) choice of the five subject areas as mother units; (c) a six week intensive training program in population education for experienced teachers and curriculum writers from different grade levels and disciplines with no prior background in population; (d) preparation of draft subunits by these curriculum writers and teachers through teamwork and frequent plenary sessions; (e) consultation with specialists in education and population; (f) field-testing in respective

PEP curriculum writers working on the subunits.

Value orientation is lacking in the PEP curriculum and is urgently needed in population education.

schools; and (g) revision of original efforts.[20]

The philosophy adopted by PEP revolves around the concept of *quality of life*. In this light, population education is defined thus:

"Population education is the process of developing awareness and understanding of population situations as well as a rational attitude and behavior towards those situations for the attainment of a better quality of life for the individual, the family, the community, the nation and the world".

This definition served as a frame of reference for goal determination, content selection, and production of materials.

The goal, briefly stated, is to make the young "realize that socioeconomic development balanced by a moderate growth rate can facilitate the development of a higher quality of life for the nation and that a small family size can contribute to the quality of living of the individual family."[21] Towards this end, the PEP aims to affect knowledge (including recall, comprehension, application, synthesis, analysis, and evaluation),[22] attitudes, and skills regarding five major topics: Demography, Determinants of Population Growth, Consequences of Population Growth, Human Sexuality and Reproduction, and Planning for the Future.[23]

The researchers and policy planners accept PEP's stated goals and objectives and the two chosen mother subjects for these reasons: the absence of theory and research data to the contrary; the fact that these were drawn up by acknowledged population education and education experts; and the short time allowed by the conference. However, they recommend research on the appropriateness of the conceptual framework pointing out that the conceptual frameworks of the mother subjects are now being changed in line with the current curriculum revision on all disciplines.

The home economics and health supervisors and one science supervisor, meanwhile, emphasize the need to give importance to value orientation as a content area in population

One expert cautions curriculum developers against the use of bombastic quotations of authorities and "scare statistics" about population explosion, and suggests instead a simple, logical, "non-scare" presentation of demographic concepts.

education, as is being done by Wesleyan College. They feel that value orientation as a teaching method should be explained in the Background Information for Teachers (BIT). It is taught in teacher-training echo seminars. Similarly, Secretary Estefania Aldaba-Lim, speaking as an educator, stresses the need to touch on the aspect of values. She explains that at PWU, human relations dynamics is used to handle this aspect.

(A separate treatment on this appears in the section on Teaching Strategies, p. 38.)

On the other hand, from his experience as a sociologist and population educator at Xavier University (which used to offer a three-unit population education course) Madigan* suggests that the proper motivational appeal for population education and family planning to Filipinos could be altruistic, emphasizing long-term benefits to the family, rather than the material advantages of family planning. (The latter is the prevalent message in the mass media.) The Filipino, according to Madigan, would be more strongly motivated to practice family planning if he is told it will redound to the welfare of his children and his children's children.

Except for the suggestion that value orientation be added as a content area, the five major topics selected by PEP have not brought up any conflicting views. Concepts under these topics are embodied in subunits developed by PEP. These subunits usually take from one to two weeks to teach (except in mathematics) and consist of an overview, statement of objectives, content outline and/or concepts, and suggested activities and test exercises.

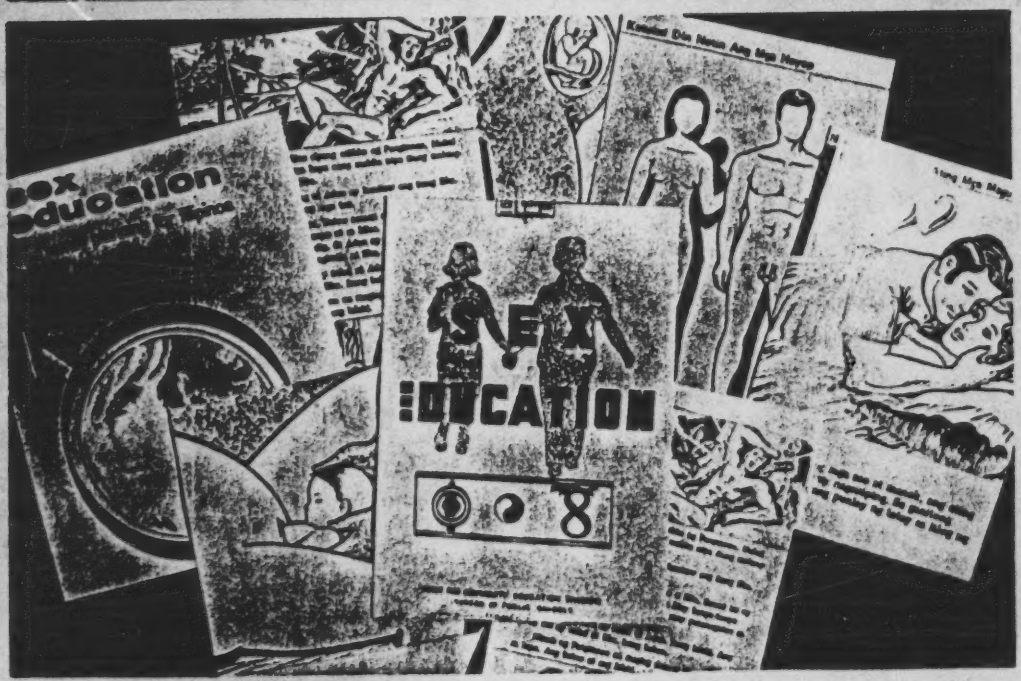
Emphasis on family size

A large part of the curriculum guides deals with family size. This is explicit in the first objective cited by the PEP information handbook, *Planning for the Future:* "Through the integration of population education units in the curricula of the elementary, secondary and teacher training levels, it is expected that the Philippine family-size norm will be reduced. . . ." Massialas criticizes this "overemphasis" on family size especially in Grades 1-6. There seems to be the "hidden assumption that the small family is the only solution to the Philippine population problem, neglecting macro-level considerations such as economic development, and national well-being".

The participants, however, are generally satisfied with the PEP curriculum guides, which they say have a good mix of macro-level (demography and population change) and micro-level (personal aspects, such as family size and sex education) content. The social studies group adds that the format of the guides is comprehensive and complete because it includes an overview, an outline, materials and references, evaluation, and text exercises.

A mathematics teacher, however, notes the overemphasis on family size in mathematics, especially in mathematics 1-3, which contains no other population concepts and comes out as very repetitive. The science and mathematics supervisors, recommend that more content be included on human ecology.

In the researchers' group, Madigan* objects to the overemphasis on the aspect of human sexuality in grade school and high school levels. He also frowns upon the tendency to allow the degeneration of the macro-level aspects of the population problem into bombastic quotations of authorities and "scare statistics" about population explosion, resulting in an unreal picture.[24] He appeals for a simple, logical, "non-scare" presentation of the argument that high birth rates and declining death rates tend to result in a high population growth rate which the country's economy can no longer manage after a certain time.



The topic most favored among teachers is human sexuality.

Not a few teachers and supervisors feel that it is practical to introduce contraception in the elementary grades, especially in the rural areas where many students drop out of school early and marry soon afterwards. Others, however, feel that it violates curriculum principles and is therefore better left to out-of-school agencies.

Favorite topics

As to topics, teachers consider human sexuality as their favorite, including pubertal changes and boy-girl relationships (science and home economics groups). Only the home economics group considers as inappropriate to elementary level the topic of male sexual maturity, particularly ejaculation and climax, for Grades 5 and 6 girls. The science and mathematics supervisors agree that the topic of climax is irrelevant to Grades 5 and 6, but that of ejaculation is appropriate in connection with the topic of pubertal changes. They particularly like the emphasis on human ecology in the UP-SEC materials and recommend that more be done along this line in the PEP curriculum guides.

When to introduce contraception

Under this area an issue that has generated a diversity of opinions is the level at which to introduce the topic of contraception.

The Wesleyan College integrates contraception in Grade 5; PEP, in third and fourth year high school; and the Philippine Women's University, in fourth year high school. The home economics and social studies teachers feel it is practical to introduce contraception in the elementary grades, especially in the rural areas where many students dropout of school early and marry soon afterwards. Sixty-seven per cent of the supervisors agree.

The home economics and health groups add that the influence of mass media in the spread of ideas and knowledge on contraception cannot be ignored.

Clarifying the issue, the science and mathematics supervisors explain that particular contraceptive methods may be meaningless to children, but that the basic concept of preventing fertilization is meaningful in the elementary level and may be taken up under the subject of human reproduction. Some cases could call for a discussion of methods, as when a 14- or 15-year-old fifth grader is about to get married and asks for information. For this reason, the science and mathematics supervisors recommend that contraception be discussed in Grades 5 and 6 simply as "the prevention of fertilization," with no methods described. Contraceptive methods can then be discussed in fourth year high school.

The researchers and policy planners' group, however, is divided on this question. Some policymakers (Eslao,* Roa*) emphatically speak for introduction of contraception (including methods) as early as Grade 5 or even earlier. They point out as reasons the early dropout rate and the readiness of elementary students in the rural areas, as proven by the Wesleyan experience.

Others question this point on the following grounds:

1. From the academic point of view, it violates curriculum principles and will mean sacrificing the logic, sequence, and conceptual heirarchy of the discipline. PEP should confine itself to formal education tasks and leave to out-of-school agencies the topic of family planning methods (Socrates*).
2. The dropout rate may soon be minimized through the continuous progression scheme (Brual*),
3. The topic is already being considered by out-of-school agencies.

One member particularly expresses apprehension that the inclusion of contraception in the curriculum would encourage premarital sexual experimentation. The group thus recommends that further studies be done on this issue.

Problems encountered by teachers

From their own field experience and actual

The task of developing a unified syllabus should be a joint effort of the PEP and the newly created National Curriculum Development Centers for Science Education, Social Studies, Language, and Practical Arts.

classroom practice, the teachers confirm encountering difficulties in integrating population education into the mother subjects. They cite several problems here discussed, to which the supervisors, researchers, and policy planners have varied reactions.

1. Teacher overload:

Teachers feel they are loaded with "too many enrichment subjects" (drug education, the Green Revolution, etc.). Thus they tend to give these subjects only the most superficial treatment. They have a lot less time for evaluation tests, which they then tend to accomplish hastily and uncritically.

Devoting more time to population education does not work in the teachers' favor either, in the estimate of some supervisors. Such supervisors seem to judge teachers as to how fast and how much of the mother subject the teachers deliver – in fact, as to how many units of the mother subject are finished. This attitude seems to be: the more time devoted to population education, the slower the development of the mother subject.

However, 52 per cent of the supervisor-participants disagree with the claim that teachers are overloaded with enrichment subjects, or that supervisors tend to judge teachers according to speed of delivery of the mother subject. To shed light on the issue, the social studies supervisors offer two possible reasons for this feeling among teachers:

a) There are teachers who "replace" rather than integrate into the curriculum – who tend to overdo integration of population education to the detriment of the mother subject. This could be attributed to the fact that many teachers still do not understand the meaning of integration; they take it to mean substitution rather than enrichment.
b) There are indeed certain supervisors who are subject-matter-conscious rather than skill-conscious or behavior-conscious and who impose speed of coverage as a criterion. These supervisors, according to the social studies supervisors, should undergo retraining.

The supervisors thus propose as part of their plan of action a regional workshop for supervisors and program coordinators in all the enrichment areas – population education, drug education, environment education, consumer education, Green Revolution, etc. With the workshop, they hope to integrate all these areas into one teacher's guide and do away with the current proliferation of subunits.

The researchers and policy planners react sympathetically to this difficulty commonly expressed by teachers. They agree with teachers that the problem of overload would result from the many and varied syllabi given them. De la Cruz* proposes that there be one syllabus for a mother discipline in which all these enrichment areas are integrated.

This goes one step further than the above-mentioned supervisors' proposal, which requires two syllabi: one for each of the mother subjects, and another for the enrichment subjects. Having two syllabi, in the view of researchers and policy planners, would still leave the burden of integration to the teachers. De la Cruz thus stresses that one must *demonstrate* in a syllabus the actual

Priorities should be identified among and within enrichment subjects, and those that could appropriately be taken on by other institutions should be weeded out.

integration into the mother subject to assure acceptance and implementation by both teacher and administrator. In this regard, they obviously feel that one-week echo training seminars alone will never achieve this.

The researchers and policy planners feel that the task of developing such a syllabus should be a joint effort of the PEP and the newly created National Curriculum Development Centers for Science Education, Social Studies, Language, and Practical Arts – in particular the first two. Hernandez* emphasizes the urgency of PEP and similar agencies' coordinating closely with these centers in developing all syllabi, textbooks, and other instructional materials.

Hernandez* and Socrates,* though, caution against overloading the academic curriculum with too many enrichment subjects, which are merely informational and could more properly be within the purview of out-of-school agencies and the mass media. It is thus recommended that examination of the curriculum be undertaken to identify priorities among and within enrichment subjects and to weed out topics that could appropriately be taken on by other institutions.

2. Dearth of materials

The insufficiency of materials for teachers and pupils, including curriculum guides, research references, and visual aids, is the most common complaint among all five teacher groups. There seems to be a problem in delivering curriculum guides to those who have been trained, so much so that actual classroom implementation has been hindered.

A popular request among teacher-participants is that pupils' guides (apart from the PEP curriculum guides) and references be made available. In this way, data-gathering and research activities which are encouraged under the discovery approach could be adequately implemented. Pupils' guides, such as those produced by the University of the Philippines Science Education Center (UP-SEC), are seen as an incentive for students to do their own research. The mathematics group observes that SEC may be on the right track because students' guides are in keeping with the "continuous progression scheme," which calls for student-oriented rather than teacher-oriented approaches.

To ease the problem of lack of materials, the researchers and policy planners suggest that the Commission on Population (POPCOM) set up a lending library of audiovisual materials, mostly slides, for population education.

On this point, the supervisors generally acknowledge the teachers' claim of a dearth of materials. The home economics and health supervisors, however, take exception, saying that teachers are expected to devise their own materials after training.

The science and mathematics supervisors further agree to a suggestion of the teachers that pupils' materials should be prepared along the lines of self-learning kits, or SLK's,[25] which are investigative rather than prescriptive. They also enjoin PEP to produce comic books, educational films, and other teaching aids. They feel that current family planning films are inappropriate for classroom use.

The supervisors themselves generally express the need for more demographic data for teacher-training seminars, particularly the University of the Philippines Population Institute's "The Philippines:

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Profiles, Problems, Prospects." They further suggest that enough guides be printed and sent to trainees even before their training seminars.

Some areas, however, have shown initiative in devising ways to tackle this problem.

A supervisor from Davao relates that the problem of lack of materials was solved in that province through the establishment of an Instructional Materials Center. There, even teachers not trained in population education were encouraged to pool up-to-date clippings and references for use by population education trainees. Davao has decided to make materials its number one priority this coming school year instead of the training of more Supervisory Training Teams (STT's).

A supervisor from Manila, on the other hand, says that in her district, the problem of lack of materials is handled by a population coordinator who manages the exchange of materials.

As a whole, the supervisors thus agree to solicit more reference materials on population education from the US Information Agency and the Asia Foundation.

Further clarifying the problem, teachers from the rural schools complain that they usually get the "leftovers," mainly obsolete materials and references no longer needed by their mother schools. Supervisors admit a tendency among some school principals to discriminate against extension schools in the appropriation of materials and equipment.

The science and mathematics supervisors, supporting the claim of the teachers, report that teachers still receive materials that run counter to investigative, discovery-type teaching and learning. These materials, which were ordered years ago, are being filled only now.

3. Lack of time within the existing curriculum

Lack of time within the existing curriculum, especially for answering students' numerous questions on population education, is a common complaint.

Davao solved its problem of lack of materials through the establishment of an "Instructional Materials Center".

The mathematics group has a unique problem of when to integrate population education into that subject (which is primarily concerned with the teaching of skills rather than substance). The group suggests that students' "extra questions" could be entertained after class hours. The social studies teachers suggest that all those implementing population education should receive curriculum guides not only for their subjects but for all other subjects as well. This would help students connect and integrate experiences, and when the teachers do not have enough time to answer questions, they could refer their students to other teachers whose subject areas are relevant to the students' questions. One social studies teacher, on the other hand, suggests that teachers make arrangements among themselves in such a way that they could avail of one another's class hours at a specific period when necessary. Sixty-eight per cent of the supervisors agree that teachers should be allowed to plan their own teaching schedules.

Another teacher group proposes that the teacher-in-charge be made the population education teacher because he/she would have more opportunities of meeting students during the day, answering questions, and connecting lessons.

On this issue, the supervisors suggest that teachers should be trained to see all the new content areas or enrichment subjects as interrelated and forming a cohesive whole. The training will also enable them to interpret integration "correctly" as enrichment, never as implying neglect of the mother subject. A science supervisor from Cebu relates that his superintendent has recommended the elimination of

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Most of the teachers feel that the week-long echo seminars are too short for them to absorb all the contents and approaches.

some obsolete chapters from the mother subjects, de-emphasis on relatively unimportant topics, and the replacement of these chapters and topics with population education concepts. The science and mathematics supervisors regard this approach as worthy of consideration.

In response to such problems, administrators are at present experimenting on a new time schedule of class periods in high school under the Revised Secondary Education Act. Under this, class periods three times a week will each take one to 1½ hours, instead of 40 minutes as before, due in part to the demands of the inquiry and process approaches.[26]

4. *Incompetence and negative attitude*

A fourth common problem has to do with some teachers' incompetence and negative attitude. The three groups note that there are not a few trained teachers who still do not implement population education in their respective schools. The situation is not corrected in some cases because there is no follow-up. Most of the teachers feel the week-long echo seminars are too short for them to absorb all the contents and approaches. A supervisor from Negros Occidental points out that information tests given teachers before training show a very low level of knowledge about population concepts and situations.

The supervisors unanimously agree with this finding and recommend that participation in echo seminars be lengthened and expanded. However, they remind the teachers to regard the seminar only as a starter, after which they are expected to do research on their own. According to the supervisors, many teachers do not really understand the idea of integration. As a result, they do not know how to use the curriculum guides effectively. Priority, therefore, should be given to re-orienting them on the concept.

Another reason for training more teachers is the fact that there is lack of continuity in the teaching of population education. It is not unusual, for example, for a pupil to have population education in Grades 1 to 2 and then have none in Grade 3 because there are no trained teachers.

5. *Lack of knowledge of strategies in teaching subunits.*

The teachers are not completely familiar with the strategy to be used in teaching population education subunits. The mathematics teachers point out a tendency to break the continuity of learning either in population content or by diversions from the mother subject. This brings up the perennial question of teachers, particularly by the health group: "Should we teach the unit continuously (meaning we do not break up lessons) as a whole, or should we inject it in lessons as they are deemed relevant to population education?"

A Grade 4 social studies teacher relates her strategy of teaching the whole population education subunit continuously. For example, on the topic of change in the mother unit, she teaches the whole population education subunit on migration uninterruptedly from Lessons 1-5. She feels that breaking up the subunit would greatly reduce the needed impact and retention of population education.

6. *Lack of administrative support.*

Lack of support from administrators is an additional problem. Teachers thus recommend that administrators, including principals, district supervisors, division coordinators, and superintendents, be retrained. Social studies supervisors add that trainors should initiate sessions with school administrators, especially the new

Supervisors feel that research supervisors and superintendents should give priority to follow-up evaluation of the manner in which teachers use curriculum materials.

or non-population-oriented ones, to win their support for the program.

Supervisors feel that research supervisors[27] should give priority to follow-up evaluation of the manner in which teachers use curriculum materials. They also mention that superintendents are key persons in the decision-making process in the division. In many cases, supervisors bring to the superintendents' attention problems of policy and procedures emanating from the division level. In this connection, four supervisors are satisfied that they have innovative and supportive superintendents. A fifth, however, from a northern Philippine province, complains of the non-implementation of population education in his province because of the indifference of fellow supervisors and their superintendent.

7. Parents' conservatism

Conservatism of parents is a final obstacle. It is thus suggested that PTA meetings be used as a venue for acquainting parents with population education and making them feel they are being consulted. According to almost all the teachers, one major problem, however, is that PTA meetings are poorly attended. There is definitely a need to find new ways to motivate and encourage parents to attend these meetings.

The mathematics group emphasizes the need to link non-formal with formal population education. They suggest that adult education teachers should expand their coverage to include more parents in the rural areas. This way, the group explains, population education as it is acquired in school can be followed up at home. The health group, however, believes that parents will soon be agreeable to population education because similar campaigns and enrichment activities are paving the way. These include the nutrition program's "Operation Timbang," food production, consumer education, and the Department of Local Government and Community Development's meetings on family planning.

A supervisor from Davao relates that in her district, an advance team of adult education teachers has softened parents' hostility and made them more receptive to population education through family life workshops, mothers' classes, and home economics classes.

It is the consensus among the teachers that family life, which is among the least controversial topics, is the proper starting point for population education in the elementary level.[28] A science teacher suggests that in the work-oriented curriculum of science, population could be integrated into activities done outside the classroom as part of the "practical arts" phase, such as when helping parents with household and farm chores.

The supervisors from Manila and Bulacan, meanwhile, report that the linking of in-school and out-of-school population education (the "IS-OS approach") is being pilot-tested in high school and Grade 4, respectively.

It is important to note that these difficulties, most of them administrative in nature, are more or less universal. And these are echoed in two other distant places.

The first was the Wesleyan Population Education Evaluation Conference on January 31, 1975, in which teachers and aministrators from Tarlac and Nueva Ecija cited as problems in integration: (a) lack of training; (b) lack of visual aids; (c) lack of time for population education instruction due to the over-crowded cirriculum; and (d) discontinuity in the introduction of population education concepts.[29]

Similarly, in the second case, a status report on population education in US schools by Susan Gustavus and Carl Heuther mentions the problems most frequently cited by teachers as:

Superintendents are key persons in the decision-making process.

(a) lack of time; (b) unavailability; (c) high cost of materials; (d) inadequate training; and (e) difficult curriculum fit.[30]

Localization of guides

Although all the participants generally accept the content of the curriculum guides, they raise the need to localize these guides.

Asistin* brings up the question earlier expressed by teachers: how relevant are the PEP-prepared (centralized) guides to various regions?

In response to this, Cayari* explains that teachers are free to inject particular ethnic materials where these are suitable and that PEP has plans to develop supplementary cultural materials for specific regions later on.

Hernandez* suggests that the newly created Regional Staff Development Centers (RSDCs) could be the ideal agencies to develop localized curriculum guides and materials. RSDCs are a project of the Department of Education and Culture and Educational Development Project Implementing Task Force (DEC-EDPITAF). Patterned after the former Regional Science Teaching Centers, they are located nationwide (14 have already been identified), cover all subject areas, work closely with the Department of Education and Culture, and disseminate and provide feedback on materials developed by the national curriculum development centers.

The language barrier

A related issue is the language barrier. All the teachers speak about the difficulty of using English, particularly in the rural areas. They thus suggest that the PEP translate the guides instead into Pilipino and the regional dialects.

A supervisor from Cagayan de Oro calls the attention of PEP and the Institute of National Language to Department Order No. 25, implementing bilingual education and asking for the translation of the PEP guides into Pilipino.

The supervisor from Davao says that the Davao team has already submitted Pilipino translations of population education terms used in the guides.

Teaching strategies

On the matter of strategy to be employed in teaching population education, the PEP curriculum guides call extensively for the use of the discovery approach, which is sometimes called "conceptual approach," "inquiry approach," and "process-oriented," or "activity-oriented approach."[31]

An activity in Elementary Science illustrates how a concept – "rapid population growth in

It was suggested that the newly created Regional Staff Development Centers (RSDC's) be the agencies to develop localized curriculum guides and materials for population education.

an area causes overcrowding in that area" – is developed by discovery at the simplest level. Pupils bring bottle caps or "tansans" and a piece of coupon bond paper. The coupon bond represents the area of a place (community, province, or country). Each pupil puts a bottle cap and outlines the space it covers. They keep on adding bottle caps until the area is filled up. Questions are then asked, such as: if a bottle cap represents a person, what will happen to the space on earth for each person as the population increases?[32]

This method is intended to help the child internalize a concept by guiding him to discover facts on his own and the relationship among these facts.

Other strategies encouraged by the PEP are: role-playing, which the PEP Research Unit considers the most effective method so far (Alberto, 1975 – an example is the treatment of migration behavior in Grade 4 Social Studies), simulation, gaming, buzz groups (5-to-20-minute, small group discussions), debates, brainstorming, comic strips, posters, charts and graphs.

Lane and Wileman of the Carolina Population Center favor six teaching strategies for the population education discovery approach: role-playing, gaming, simulation, expository, value clarification, and programmed instruction.

A felt need: values clarification strategies

The Carolina Population Center has developed self-learning activity packages using these six strategies. This writer had the opportunity to obtain one that uses values clarification. It is a method which has not been fully used by the PEP curriculum,[33] but which policymakers, teachers, and administrators strongly agree should be explored for population education.

The package, entitled "Sexual Behavior," consists of a self-administered slide-sound tape, pre- and post-tests, and an activity booklet. It deals with the process of how sexual behavior affects and is affected by human needs and values. It makes the listener-viewer appreciate different mores with regard to sex roles in various cultures. It also makes him undergo an examination of the process by which he arrives at values, studying his actions and feelings to understand what he actually believes, what he chooses and how he acts.

Based on the classic three-part process of "choosing," "prizing," and "action" (Louis Rath), sample self-investigative questions from the package are: "Did you choose this value yourself or did someone else apply any pressure?"; "Name at least one alternative to this value that you could have held but rejected; and why did you reject it?"; "Are you happy about your value?"; and so on. Suggested teaching approaches are the "value-clarifying response,' where the teacher asks questions that will cause the student to think through the steps of choosing, prizing, and acting (for instance, "is that important to you?"); the "value sheet" (self-instructional variants of which are questionnaires, "interest inventories," diaries, and "thought sheets"); taking a behavior episode and asking the student to take a position and consider its consequences; and role playing, focusing on feelings of the character, alternative solutions, and influences from actions.[34]

Values teaching *per se* is not without precedent in Philippine schools. In the period 1950-1957, the Institute for Human Relations of the Philippine Women's University pioneered in values teaching for high school, specifically for first and second years with the production of a human relations workbook for teachers and intensive training (on the national and regional levels) and experimentation in human relations teaching.

The objectives of the human relations classes were to help students:

(a) learn how to get along better with themselves and others;

(b) appreciate the power of the emotions and accept more gracefully their own emotional strengths and weaknesses;

(c) progress toward emotional maturity.[35]

Based on the psychodynamics approach to behavior, stimulus stories served as springboard for students to discuss their emotional experiences and difficulties, without the teacher applying moral or academic judgments. Sociodrama or role playing and psychological games were used extensively.

Evaluation was done to see what changes were wrought in the way a student perceives and is perceived by his classmates. This was accomplished by means of students' written reactions, personality inventories, and class acceptability records, the last being sociograms designating students' choices of whom to invite for a party, who to elect as class president or treasurer, who to seek help from for lessons, who gets along best with classmates.

Human relations classes were either considered as units in health education, social studies, and English, or conducted during homeroom or guidance periods. The classes were so designed that textbooks are needed less and less as teachers gain more and more experience and begin to creatively use events in and around school, newspaper articles, movies, etc.

This psychodynamic approach is a radical departure from the traditional authoritarian and prescriptive modes of teaching values used by earlier character education courses.

If the PEP's central goal is to help the student towards independent and rational decision-making, value clarification as a teaching strategy is urgent. Furthermore, because population educaton is a value-laden course, dealing openly with how values are held is something that cannot be avoided even in our "hiya"-characterized culture.

On the discovery approach

The teacher-participants almost unanimously concur with the PEP decision to "put emphasis on the discovery approach and less emphasis on lecture" (quoted as part of the fourth objective of the PEP curriculum, as cited in footnote 21, (d). And the rationale is that this objective, analytic, critical model of inquiry can deal in an ethically and intellectually defensible way with social science topics which abound in emotional-moral content (Massialas and Smith, 1965). Stephen Viederman, on the other hand, feels that there has been undue stress on the discovery approach. He thinks research evidence has yet to prove that it is significantly better than the expository and other so-called "traditional" approaches.[36]

The mathematics group suggests discovery and gaming for the primary grades; discovery and role playing, like household budgeting exer-

cises, for the intermediate grades, and discovery and lecture for high school. The social studies group particularly identifies role-playing as uniquely effective in the elementary grades.

Some supervisors observe that teachers themselves prefer role-playing and the use of audiovisual materials during training seminars to lectures by resource persons.

On the other hand, the home economics group confirms a finding by the Science Education Center that the lecture-and-activities approach is most effective. The health group, however, partly disagrees, claiming that lectures are not too effective among elementary students. According to them, the students' span of attention is "very short" and "they easily get bored." In response to this, the social studies group claims that the SEC finding would hold only in urban schools where there are adequate educational facilities and where teachers are better trained than their rural counterparts.

An issue which has elicited considerable discussion among educators during the conferences is whether or not the content of the PEP teachers' guides adequately bears out the avowed discovery method. While there is a conscious attempt to couch behavioral objectives in discovery method terms, some feel that certain curriculum items are inconsistent with creative discovery. Massialas notes certain "curriculum contents that reflect the classic concept of socialization as cultural transmission or a one-way street where there is no interaction between learner and others in the environment." He also cites the use of the Pavlovian principle of repetition and reinforcement rather than eliciting creative ideas from the learner.

Curriculum revision is at present going on at the PEP. And the PEP is taking these comments into account in an effort to better foster independence and creativity on the part of the student, and to discourage teachers from becoming indoctrinators rather than implementors of guided discovery.

The effective use of the discovery method may be traced more significantly to lack of training or understanding of the method and to formidable administrative constraints.

In an SEC survey, most teachers have been found to be unsuccessful implementors of the discovery approach. The reasons are:

1. Lack of training in the use of the discovery approach.
2. Negative or lukewarm attitude among "old" teachers (those who are used to the lecture or "tell" method);

Teachers recommend that local, ethnically suitable materials be integrated into the curriculum.

3. Too heavy teaching loads;
4. Inadequate facilities and lack of teaching aids (63 per cent of the supervisors are in agreement with this);
5. Inadequate differentiation of the discovery approach from the other approaches now being encouraged within the educational system. These include the conceptual and inductive or process approach (69 per cent of the supervisors are also in agreement with this).

The teachers confirm this SEC survey finding, as do the researchers and policy planners. According to the latter two, part of the teachers' difficulty stems from the typical tendency to interpret the discovery approach to mean only problem-solving, when, in fact, there are other types of discovery, and much of learning, according to Gagné, is assimilative or receptive. The crucial point is for the process to be meaningful to the learner.

They also feel that presenting the discovery approach as though it were something new should be avoided. The term "discovery approach" and technical terms and labels like "entry behavior", "terminal behavior", or "enroute behavior" are inappropriate for dissemination to teachers in the field during training seminars, and are useful only to teacher-educators and researchers.

It is also stressed that teaching the use of the discovery approach should be done by demonstration, actual application, and practicum.

To shed more light on the issue, three groups of teachers – home economics, mathematics, and science – claim that the bureaucratic system of education in the country does not encourage the discovery approach. Home economics teachers particularly feel that because the teacher has very little time to pursue the method, he/she succumbs to the temptation of helping the students finish discussion of a topic by "asking too many leading questions."

The teachers also note that most textbooks are tradition-bound, giving facts, arguments, and conclusions so that students who read the text in advance lose interest in the ensuing activities.

The science group adds that the current teaching guides which are prepared by a central body put the classroom teacher "in a straitjacket", with so many activities to finish and with so little time to do them. This being the case, teachers cannot help but become indoctrinators in their desire to finish all activities on time.

One teacher-coordinator brings up another issue. She points at district tests as discriminating against students taught according to the discovery method. These tests aim at memory skills rather than critical thinking. So, although these students' experiences are richer, they appear to have learned less than those taught by the traditional approach. The science group further feels that these tests go against the continuous progression scheme being used in public schools.

Most of the supervisors agree that tests should be constructed to appropriately test learning by discovery method. They also remark that priming for the NCEE test discourages the use of the discovery approach, for two reasons. First, schools compete for high scores in the tests, so teachers tend to "spoonfeed" their pupils in order to cover as wide a range of topics as possible. Second, the NCEE tests evaluate memory skills rather than critical thinking and therefore work against the discovery approach. Socrates*, however, emphatically denies the supervisors' statement.

Presenting a third opinion, Arong* states that it is hard to say where memory ends and critical thinking begins. He is confident that the authors of the NCEE are fully aware of and therefore must have considered this need to evaluate thinking.

Further commenting on the bureaucratic system of education, one science teacher notes that writers of teaching guides are chosen on the basis of seniority. Unfortunately, the most senior are not necessarily the ones who keep abreast of teaching innovations.

Teachers feel they should participate in writing curriculum guides because they are the users of the material and can best perceive student needs and reactions.

Who should write curriculum guides?

The home economics and health supervisors agree on this point: that the guides would be more relevant if there were representation from the field instead of the different bureaus only. The science and mathematics supervisors go further. They feel the curriculum should be planned by involving parents, teachers, and students as well, to make the content and approaches relevant to the locality.

The teacher-participants answer with an emphatic "yes" to the question of whether or not teachers should participate in the writing of curriculum guides. All but one supervisor agree. The teachers point out that they are the users of the guides, they are "in the forefront," and they can best perceive student needs. The science group adds that teacher involvement in writing the guides would provide a "built-in" assurance that teachers would use the guides conscientiously.

As to how this participation could be put into effect, the teachers recommend that local, ethnically suitable materials be integrated into the curriculum. This, in effect, would call for localized curriculum development, which was discussed earlier in this paper. With a general guide prepared by the Central Office, teachers could come together in regional workshops and perhaps even bring in parents and technical experts to help. All (but one supervisor) again agree with this approach.

The mathematics teachers thus suggest that teachers from the various regions list down local and ethnic cultural beliefs and practices (particularly superstitious beliefs related to population matters, such as taboos associated with menstruation and conception) as a starting point for analysis, and for infusion into curriculum guides. The social studies teachers further point out that teachers in the subject can already integrate local cultural materials because the Department of Education now allows them to improvise and to deviate from textbooks. This development is in keeping with the conceptual approach of the "new social studies" and contradicts reactions (noted earlier) to strict deadlines.

The researchers and policy planners generally feel that improvisation as the teaching situa-

tion demands is not objectionable. However, they strongly doubt that teachers have the time or sufficient competence to actually write guides. And should they attempt to do so, they should have the guidance of their supervisor or principal. One PEP member explains that since population education is a new field, the teachers are not ready to write guides on the concepts involved.

Evaluation and revision

In the absence of a solid knowledge base, the curriculum guides have been revised on the basis of comments of selected consultants and content specialists, reactions of selected parents and teachers to "potentially controversial" content (so as to get feedback on which grade levels to teacher certain concepts), field-testing in pilot divisions, and feedback from the curriculum writers themselves and from the tryout teachers. Thorough revision by a Technical Committee in terms of operationalizing goals through more rational exercises and activities – the whole gamut, in fact, of lesson-development – is being attempted.

Training and research support

Population Education is taught not by specialists but by regular classroom teachers, since the materials are integrated into the existing curricula. Therefore, population education is "new" to these teachers.

The training goal is to provide participants with basic knowledge and understanding of population and the appropriate teaching methods to develop in them the readiness and competence to teach population education.

There are two kinds of training: in-service, for teachers already in the system, and pre-service for those studying to be teachers.

A five-week nationwide training program was first given to all division supervisors for elementary and secondary levels. These trained supervisors (146 in all) were grouped into Supervisory Training Teams (STT's) which simultaneously conducted one-week echo training courses for elementary and secondary teachers in their own divisions and regions. To date, approximately 57,000 out of the targeted 187,000 elementary school teachers have been trained and about 500 out of the targeted

Curriculum revision is going on at the PEP.

15,600 high school teachers have been pilot-trained.

Training for instructors of teacher-training colleges is usually conducted during summer on a five-week intensive schedule. A training manual called "Resource Book in Population Education" for teacher education was prepared as supplementary handbook for these training institutions.

The teachers are agreed on two qualifications for themselves: (a) thorough training in population education; and (b) proper attitude (emotional maturity, open-mindedness, and recognition of the need for population education). Other traits cited are competence in or mastery of the subject matter and communication skills, and good moral standing.

The science and mathematics groups also cite the need to train teachers for all levels to achieve continuity in population education.

It is the consensus among the supervisors that the one-week echo seminars are too short and that refresher courses should be given to teacher-trainees and trainers to keep them abreast of new teaching trends and curriculum revisions. Eighty-four per cent of written responses from the supervisors show agreement that administrators should themselves be trained, especially in the use of the discovery approach.

But there remains the debate as to which should be given priority – the retraining of teachers or the training of new population education teachers. Some supervisor-participants even suggest a third alternative: that those already trained by PEP could train colleagues in their respective districts. This informal training takes place instead of waiting for the formal echo-training to be conducted. This, however, is not a very popular suggestion.[37]

Davao has targeted for training this coming school year all division supervisors (the district supervisors have already been trained) so they can effectively follow up trainees and synchronize classroom activities with out-of-school population education by linking up with adult education coordinators.

Cebu City and Cebu province are giving priority to the evaluation of teacher-trainees. They have requested the PEP for guidelines for this task.

The following are proposed measures to

Dr. Narciso Alberracin, Undersecretary of Education and Culture, addresses the first STT members at their closing program held on December 15, 1972.

solve teachers' difficulties:

1. Retraining on specified field problems;
2. Increased demonstration teaching on the use of the discovery approach and on when and how to integrate population education into the curriculum;
3. More frequent follow-up of teachers experiencing difficulties;
4. Locally-engendered research relative to training;
5. Annual meetings of all trainors;
6. Creation of the office of regional supervisor for population education;[38]
7. Creation of regional population education centers to coordinate with the Population Commission regional offices and to serve as information and research centers for all regions.

The researchers and policy planners express an equally high interest in the evaluation of teacher-training. One basic question raised is the discrepancy between training in Manila (the five-week training seminar for supervisors), on one hand, and the one-week training in the rural areas and actual implementation by teachers in the classroom (Eslao*), on the other. Hernandez* suggests that during the Manila training, the PEP should already hand out materials suited to the specific local needs of the various regions. Questions are also raised regarding the rationale behind the five-week training for supervisors (who, as Andrade of the PEP explains, are trained to teach teachers in several disciplines) and the one-week training for teachers.

Socrates* raises another evaluative, cost-benefit type of question: Why give an equal number of teachers in all five mother subjects equal time and the same type of training when the load and type of population education concepts are not equally distributed among them? Math, for example, has the least to do with population education (content-wise), as opposed to social studies where most of the population education concepts are relevant. He cautions against the financial drain to the PEP through this method, given the constraint of limited resources. In this connection, Lim emphasizes the economy of training that goes with a mini-course, wherein only social science teachers would be trained.[39]

Research

The research unit engages in the evaluation of and basic research on curriculum development. Basic research aims to achieve an adequate knowledge-base for a solid conceptual framework and specific contents. Among the baseline studies are:

1. "An Analysis of Population Content of Current Textbooks in Elementary and Secondary Schools";
2. "A Study of Parents' and Teachers' Reactions to Potentially Controversial Teaching Units in Population Education";
3. "A Survey of Students' Knowledge and Attitudes on Population Matters in Selected Schools in Tarlac and Pangasinan";
4. An experimental study using pre- and post-tests, comparing two types of education approaches – that of the PEP which was administered to Pangasinan elementary and high school students, and that of the Philippine Wesleyan College which was administered to Tarlac students;
5. A study on how children develop concepts of family size;
6. A study comparing family size preferences of adolescents in school and out of school, in urban and rural areas, and across income groups;
7. A study of the fertility behavior of teacher trainees involved in training programs.

Evaluation has been done on elementary and secondary curriculum materials, on training programs, on trainees' perceptions of population education in regard to aims, methods, and content. The Research Unit has also compiled a series of achievement test items relevant to population education.

For their own purposes in their own fields, the participants express their research needs. The teachers, for their part, consider the following types useful to them as practitioners:

1. Prevailing folk demography;
2. What students learn outside school;

It is recommended that a clearinghouse or information center be established to disseminate all research findings related to population education to specific agencies and individuals.

3. The "hidden curriculum" that reinforces accepted social notions related to population matters.

In response, the supervisors cite as part of their plan of action an identification of teachers' problems and needs. They are unanimous about the need for locally engendered research studies on particular teacher and student problems.

The supervisor from Davao adds that a longitudinal research project is under way to follow up the future age at marriage and family size choices of current population education pupils. Her division is also encouraging the writing of master's theses in the field of population education. The group researchers, meanwhile, recommends that a panel of experts review bibliographies of existing research relevant to population education to determine other areas which need further research.

It is also recommended that a clearinghouse or information center be established to disseminate all research findings related to population education to specific agencies and individuals who need them.

A PCF representative says that a project of the Information and Research Utilization Division is to gather, transform, and disseminate such research to administrators and professionals in the fields of population education, social science, biomedicine, and IEC. Gil*, director of this PCF division, has explained in the plenary session that PCF hopes to evolve into some kind of national clearinghouse for population research through three steps: (a) consolidation of bibliographies and research; (b) setting up of a retrieval system; and (c) a mechanism to assure continuous updating of bibliographies and acquisitions. The objective is to get every relevant item of research into the system three to six months after it is written up, thus achieving that level of sophistication where it has available information on both on-going and planned research.

Institutions besides the PEP

Although the participants in the above-mentioned conferences came mainly from the PEP system and reacted systematically only to the PEP curriculum guides, their reactions are relevant to other institutions that have developed population education curricula.

1. The Philippine Women's University Experience

The Philippine Women's University's PEC (Population Education Center) curriculum development project, funded by AID, began operations in July 1970 and ended in 1972, when the project was officialy absorbed into the Population Education Program of the Department of Education and Culture.

The PWU used what Massialas calls the "unit of study" approach. A unit of study differs from "episodes", which are infused into and interconnected with a traditional topic in a mother subject. It is not directly connected with other traditional topics, although it is presented within the general context of a curriculum content area, for example, Health Education or Social Studies. A unit of study focuses on fairly broad topical or issue areas, is conceptually independent and assumes no prior knowledge of the ideas or issues discussed in it, and provides for a sustained analysis and discussion period of no less than five or six weeks. Comparing it with the mini-course, Massialas says: "The unit approach is in line with a recent educational development, to build a program of studies as a series of instructional modules or 'mini-courses'. Presumably a unit of study can be matched with a mini-course."[40]

Population education units were prepared for Health and Science, Health and Physical Education, and Social Studies for Grade 6 and fourth year high school. Teachers were trained in their use in 1970, and field testing was done in 1971-72 in 158 nationwide pilot schools, both public and private. A mini-course was to

have been developed later beginning with an independent curriculum guide for population education developed for second year high school in 1972-73.

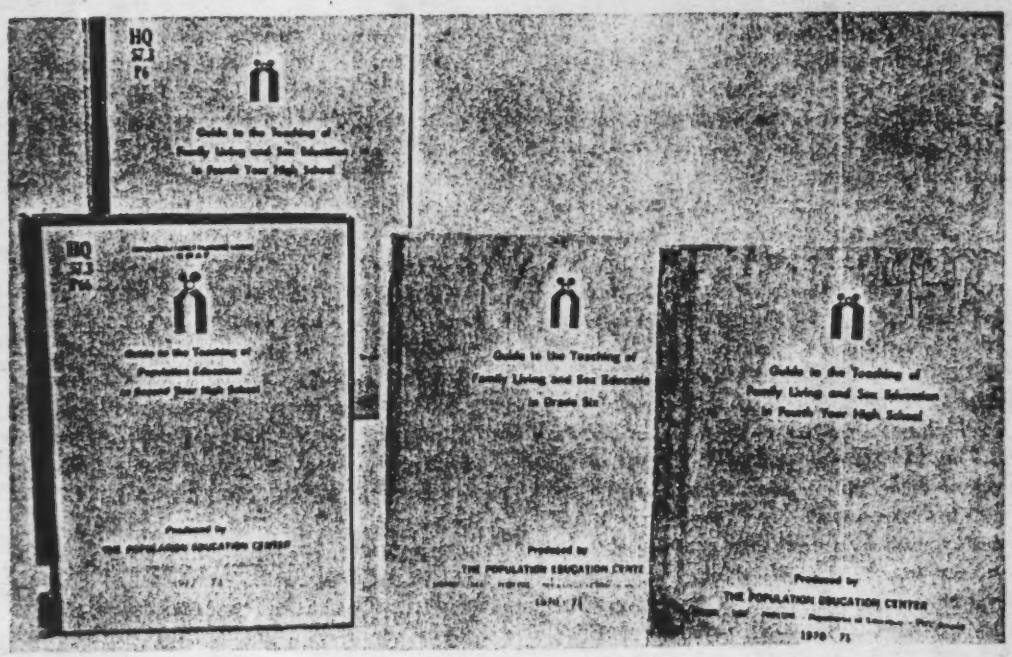
The PEC curricula are known for their emphasis on family living and sex education – the so-called "micro" aspects of population education. Their goal is to develop habits, skills, ideals, and attitudes toward sex and the family, an awareness of the causes and consequences of rapid population growth, an independent and critical approach to personal problems affecting others, and rational decision-making.

The Grade 6 guide consists of four units and 27 lessons. It emphasizes the child's responsibility to himself (as a sexual being) and to his family; coping with adolescent problems (physiological and emotional); knowledge of conception, birth, and child rearing; and analysis of demographic facts affecting the individual and society.

The fourth year guide for Social Studies and Character Education is a one-year course, consisting of 24 lessons of 20-30 minutes each. It emphasizes boy-girl relationships such as dating, going steady, engagement, marriage and parenthood, and the need for family planning.

The second year guide in population education developed in 1972-73 consists of 31 daily lesson plans and involves changing cultural values and a comparison of Philippine population with other Asian populations. The guide was to have been used in line with the so-called "New Social Studies" for the second year which revolves around the subject of "The Philippines and Asia". The lessons could be taught either continuously for a month or more, or sequentially as complete lessons once a week.

A supervisor from Manila observes that the PWU curriculum guides are still being used by several schools. She recalls that in the construction of this curriculum, librarians, counsellors, and teacher-community coordinators, among others, were consulted. The same approach as that used by the PEP – the inquiry process or



The PEC curricula are known for their emphasis on family living and sex education – the "micro" aspects of population education.

discovery approach – was adopted, using these four standard steps:

1. Defining the problem;
2. Formulating hypotheses or tentative answers to the problems;
3. Researching to test the validity of hypotheses;
4. Drawing conclusions or generalizations.

The lesson format consisted of concepts (for example, Ethics, Scarcity, or Economic Growth), supported by generalizations and selected ideas, followed by objectives of the lesson; materials and references needed, learning activities and teaching strategies (such as Terminology, Openers, Motivation), development, rounding up, and assignments.

The cognitive and personality characteristics required of its teachers by the PEC were: competence in the natural and social sciences and in child psychology, and a wholesome attitude to sex and family planning – especially the latter, since population education is a "life experience course."

Evaluation of the PEC

Grade 6 and fourth year students of pilot classes from Central Luzon, Greater Manila, and the Visayas were evaluated for seven months for cognitive learning of the specific curriculum they were exposed to (as measured by an achievement test of 60 items, multiple choice, on population dynamics, sex education, and family living). There was no attempt to measure the affective aspects of learning.

Correlational analysis of achievement (measured by test scores) and the independent variables of sex, age, and socioeconomic status was also done.

The treatment-control design was used on a random sample of 50 subjects per treatment and control group, matched in terms of class section and geographical location.

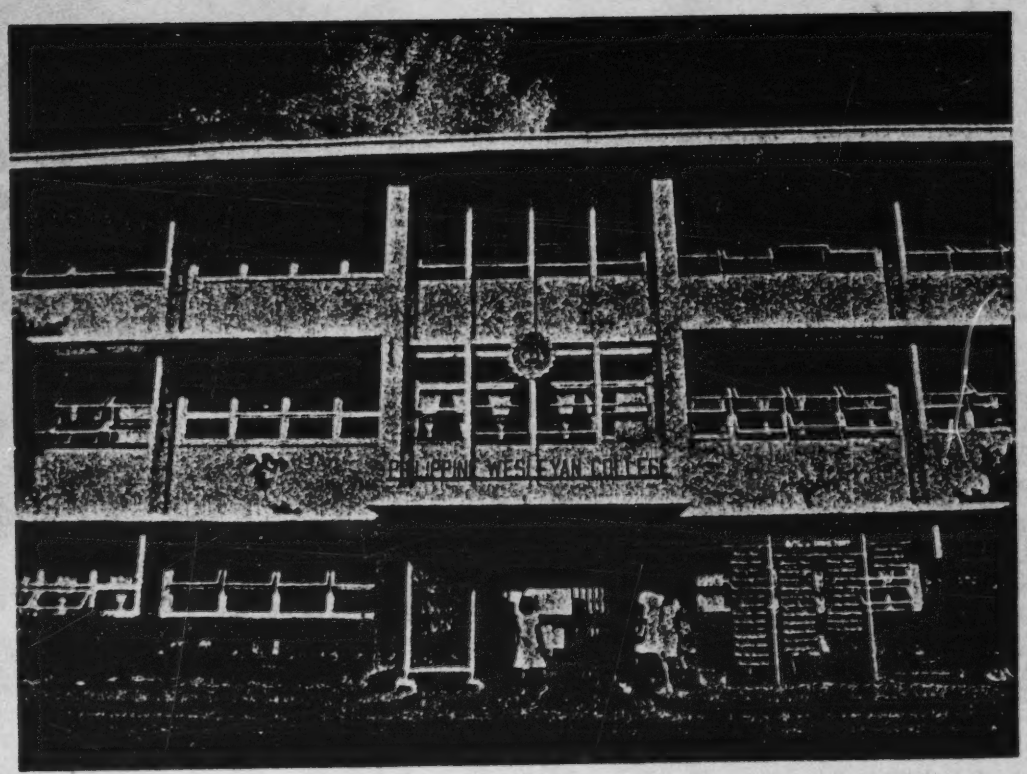
The T-test revealed significant and large differentials between control and treatment groups, suggesting that formal instruction in population education made the difference.

Correlation tests showed that:

1. Girls were more likely to score higher (this was true only for fourth year students – the authors venture the explanation that content was perhaps slanted towards the female viewpoint);
2. Older students got lower scores (this needs further investigation);
3. The higher the socioeconomic status, the higher the score. (This was, however, true only of the Grade 4 level.) Two factors that could account for this are the stress put on middle-class values and the use of English. The language problem has repeatedly been cited by PEP program officers and researchers (such as the Wesleyan College staff) as a deterrent to the program's success, especially since a life experience class like Population Education is highly verbal.[41]

The teacher participants corroborate the first finding of these correlation tests showing that girls are more likely to score higher than boys. They feel this is true because girls tend to be more studious than boys and mature faster. Most, however, disagree with the finding that older students get lower scores, although one argues that this could be true when tests require memory work instead of critical thinking. All agree that higher socioeconomic status brings in higher scores. According to them, this is so because poor students have less time to study, can afford fewer materials, and receive less guidance from their work-burdened parents.

On the subject of non-school influences on students' learning of population concepts, the teacher-participants generally consider peer groups as the primary factor. Home economics teachers, though, take exception and cite the school as the strongest influence. For the mathematics and science teachers, distinctions are made between urban and rural areas. In the former, the peer group comes first and mass media second; in the latter, the parents come first. The science teachers particularly name mass media as strongest in the urban areas, followed by the peer group, the school, and the parents. According to the health group, the peer group comes first, followed by the school, then the home. The social studies teachers, meanwhile, cite the peer group, then print media, followed by parents.



2. The Wesleyan experience

The Wesleyan Population Center grew out of the school's Community Outreach Program. In 1970 it began work in curriculum development in the elementary, secondary, and college levels under the sponsorship of the Pathfinder Fund.

Foreign consultants who helped initiate population education there were David Kline, research consultant, and Donald Chauls, curriculum consultant. Their 10-day intensive seminar in December 1972 on population education influenced the emphasis of Wesleyan content on population awareness. The third consultant was Paul Holmes of the University of North Carolina, who acted as population coordinator for curriculum development and revision. The target audience of these materials were students of the member schools of the Association of Christian Schools and Colleges.

In May 1973, the Philippine Wesleyan College cooperated with the PEP in undertaking a two-year satellite project in selected schools in Tarlac and Nueva Ecija. Funding was provided by the Family Planning International Assistance.

The objectives were:

1. To gauge the students' receptivity to population education and the knowledge gained by them upon exposure to curriculum materials.
2. To assess administrators' and teachers' receptivity to population education;
3. To devise diversified teaching strategies in order to provide the national PEP with an effective field laboratory, i.e., in terms of a curriculum model and alternative guidelines for implementation.

Forty eight teachers and 1,836 students from five elementary and five high schools in the towns of La Paz and Tarlac, Tarlac and all six colleges in Cabanatuan City, Nueva Ecija were chosen as subjects of the pilot project and evaluation.

The teaching of the WPC population educa-

Primary stress was put on population awareness education and on creating a sense of responsibility and a desire to help solve the population problem by having few children.

tion curriculum guides was started in July 1973, covering the elementary, secondary, and collegiate levels. The guides were to be taught twice or thrice a week for elementary and high school, and continuously in college until all units were exhausted.

The curriculum concerns itself with family life education, sex education, population awareness education, and education for basic value orientation. Primary stress was put on population awareness education and on creating a sense of responsibility and a desire to help solve the population problem by having few children.

The subjects chosen for integration in the elementary level were Social Studies Grades 4 and 6, Health and Science 4 and 6, and Home Economics 5 and 6. In the secondary level, the subjects were Philippine History and Government, World History, Biology, General Science, and Economics. Chosen in the collegiate level were Philippine History and Government, Sociology of the Family, and Economic Development of the Philippines. The number of minutes and lessons devoted to each subject were progressively increased according to grade level.

The micro-level aspects of population education are emphasized in the elementary level: Family life and family size, problems of overcrowding, the necessity of family planning, fertilization and fetal development, growth and heredity, human reproduction, home management, and adolescence. There was less emphasis on demographics and the consequences of population growth. The latter macro aspects, however, were increasingly emphasized in high school and college, with such topics as historical growth of Philippine population, current policies and programs, ecology and population, the relationship of population growth to economy and resources, and demographic characteristics of developed and developing countries.

Evaluation of WPC

These pilot classes were monitored during the entire school year of 1973-74. The conduct of evaluation, the authors admitted, involved crude quantitative analysis of knowledge and attitude change and lacked the objective validity normally required of research and evaluation. For example, observation by teacher-coordinators was made only once for each subject in each level. Nevertheless, the Wesleyan study still provides the most in-depth and detailed analysis among the few pioneering efforts in evaluative research in population education curricula, of which there is no systematic body yet to speak of.

Briefly, the methods consisted of observation of the classroom experience by teacher-coordinators; reactions of the teachers to the design and content of the curriculum materials, as elicited by questionnaires and half-day evaluation meetings; and evaluation of students by means of an achievement test. The test aims to measure retention of the population education concepts, and includes a knowledge/attitude questionnaire to determine students' knowledge of population matters as well as attitudes toward large and small families. The objectives were to arrive at measures of teacher ability, content and organization of curriculum materials (specifically as regards usefulness of objectives and concepts, ease of using format, effectivity of visual aids, motivational activities, and techniques of lesson-presentation, appropriateness of content to grade level, sequence and logic of presentation, and time allotment).

Feedback obtained is currently being utilized as basis for curriculum revision during the second year.

Evaluation by teacher-coordinators revealed that teaching effectiveness depended on: (a) lesson preparation (method competence); (b) population knowledge (content competence); and (c) attitude to population education.

The Philippine Experience: A Summary

Decision Points on Curriculum Development	PEP	PWU	WESLEYAN	SEC-UP	DANSALAN	DE LA SALLE
Goals and objectives of the program	Rational decision-making aimed at a higher quality of life by small family size, socioeconomic development, and moderate growth rate.	Rational and responsible family living, quality of family life.	Population awareness and rational decision-making. Preference for small family size; specifically, to provide a national curriculum model.	Experimentation on the incorporation of population education into science subjects using modern science teaching approaches.	Population education and information for in- and out-of-school Maranao Muslims.	Awareness and value orientation regarding sex and reproduction, the population problem and the need for responsible parenthood within a humanistic Christian tradition.
Methods to determine goals and contents	Workshop for curriculum writers and teachers, consultation with education specialists, review of current textbooks and writings of recognized population education experts (in consideration of the national education and population programs).	Meetings of staff with consultants, literature search.	Consultation with foreign population education experts, intensive seminars for curriculum writers.	Work-meetings with educators, curriculum writers, and representatives from concerned agencies; review of textbooks.	Workshops, PEP advice, staff training, Muslim consultants.	Modified existing guides of the PEP-DEC according to their judgment of what needed emphasis.
Specific population education content areas	Demography, Determinants of Population Growth, Consequences of Population Growth, Human Sexuality, and Planning for the Future.	Micro-level: Family life and sex education (other population areas are introduced in the 2nd year).	Family life education, sex education, value orientation education, and population awareness with great emphasis on the latter.	Human reproduction, population dynamics. Population control and human ecology are given later.	Working on Wesleyan materials with emphasis on Maranao culture and family planning and sex education.	*Edukasyong Sari* (Sex Education) and *Pag-aaral sa Populasyon* (Determinants and Consequences of Population Growth).
Types of curriculum materials	Teachers' Guides (subunits), BIT (Background Information for Teachers); Resource Book and syllabus for teacher-training colleges.	Teachers' Guides.	Teachers' Guides.	Students' Guides.	Teachers' Guides (still being developed).	Students' reading-workbook guides (except in Grade 1, teacher's guide).
Language used	English (found to be problematic).	English (found to be problematic).	English (emphatically recommends translation in whole or in part into vernacular).	English (no problem so far).	(Information not available.)	Pilipino
Evaluation of curriculum materials	Field-testing in pilot schools, informal feedback from parents, teachers, and experts.	Field-testing in nationwide pilot schools (treatment-control design, using achievement tests and correlation analysis).	Intensive two-year pilot project using observation by teacher coordinators, questionnaires for and meetings with teachers re: curriculum design and content; achievement tests and knowledge/attitude questionnaires for students.	Tryout of experimental editions in 3 high schools, use of classroom observations, student questionnaires, and feedback meetings with teachers.	None so far.	Student reactions, formal evaluation by experts, feedback from parents, feedback from users.
When topic of contraception is introduced	3rd and 4th years high school.	4th year high school.	Health and Science Grade 5.	High school.	Information not yet available.	Grade 7, but only the rhythm method.

Introduction into existing curricula	Integration (infusion or permeation).	"Unit of study" aimed for future "mini-course development."	Infusion or permeation.	Integration as units or modules in Biology.	Integration.	Integration within a language program (Pilipino) and within a content-oriented conceptual approach to social studies.
Subjects chosen for integration or connection	Health Education, Science, Math, H.E., Social Studies.	Social Studies and Character Education, Health and Science, Health and P.E.	Social Studies, Health and Science, H.E. (Elem), Phil. History and Government, World History, Biology, Gen. Science, Economics (H.S.); Phil. History and Government, Sociology of the Family, Economic Development of the Phil. (College).	Biology	Science, Mathematics, Social Studies, Religion, Vocational Arts, Health (still being developed)	Social studies as the content and Pilipino as the vehicle
Grade level placement	Elementary (priority), secondary, and teacher-training colleges.	Grade 6, 4th year, 2nd year.	Elementary, secondary, collegiate.	High school.	High school.	Grades 1-7 (Grade 6 being printed Grade 7 being written)
Major teaching method	Discovery approach.	Discovery approach.	Discovery approach.	Lecture, discussion and activities.	(Information not available.)	Lecture and activities.
Revision of curriculum materials	Lesson-revisions by a Technical Committee of consultants from the Research Unit and subject matter specialists.	(No information available.)	Clarifying definitions and explanations, sequence reordering, more visual aids, and better openers.	Simplification of content.	None so far.	To be initiated after summative evaluation.
Research to support curriculum development	Evaluative and basic by a separate Research Unit.	Evaluative research only [by field testing (once)]	Basic and evaluative research; 2-year satellite project to include KAP.	Evaluative research by experimental tryout, Laoag attitude survey.	Attitude survey of Marawi Muslims re: family planning motivation.	Evaluative. Used secondary sources for pilot materials.
Provision for teacher retraining	Separate training unit for pre- and in-service teachers; 5-week nationwide training program for supervisors, and echo seminars.	Regional training seminars.	Information not available.	None, but 2-week seminars planned.	None so far.	By means of users workshops and seminars.
Date begun	July 1972.	June 1970 (phased out in July 1972)	1970.	November 1972.	Early 1974.	Schoolyear 1974-75
Pilot sites	Nationwide, through centralized system of the Department of Education	Nationwide sampling.	La Paz, Tarlac, Cabanatuan.	Two Manila high schools, one rural (Los Baños) high school.	No classroom activities yet.	La Salle grade schools and La Salle-supervised schools (e.g. Andres Soriano Memorial School in Cebu)

Role-playing, although used sparingly, was indisputably the most effective in eliciting student participation.

Students exhibited high interest when teachers were skillful in eliciting responses, using the discovery approach. The WPC describes the discovery approach as "using of course the inductive question-and-answer method wherein the teacher asked questions until the students formed the correct or desired answers." Role-playing, although used sparingly, was "indisputably the most effective in eliciting student participation."[42]

Although the Q-A method was most commonly used, it was not easily achieved by some teachers. Teachers lacked creativity and tended to lean heavily on the printed page. Many were simply unable to handle student discussions.

In view of this, a question arises: Are our teachers still perhaps too tradition-bound to be able to adequately employ the discovery approach, which by its very nature demands of the teacher the ability to "throw away" the curriculum guide and improvise?

A basic problem is lack of mastery of the English language by the students.

Another crucial revelation was the students' inadequacy in the English language, an oft-repeated finding here and elsewhere.

The reactions of teachers revealed that the objectives for elementary and high school were achieved for the most part. Most of the elementary lessons and all of the high school lessons were sufficiently comprehensible. Order and sequence were generally considered satisfactory.

A few elementary teachers, but not high school teachers, found topics like sexual intercourse, ejaculation, and menstruation embarrassing or objectionable. In five instances, elementary teachers reported inappropriateness of topic to grade levels, but high school teachers found all high school lessons suitable to year levels. Student attitude to population education was, on the whole, positive, but all teachers felt the omnipresent language problem a formidable barrier. They all expressed the desire to be able to teach in the vernacular. The WPC's recommendation on this matter reads:

". . . . it is necessary that the curriculum be translated in whole or in part in the vernacular on a selective basis, giving priority to parts of the curriculum which were not easily understood and which could have been understood if Pilipino were used as the medium of instruction.

"A biblingual approach for the high school and college levels seems to be the choice for the purpose of better understanding and participation between students. It is obvious that a basic problem is lack of mastery of the English language by the students.[43]

Evaluation of Wesleyan students

Achievement tests and knowledge and attitude questionnaires were administered only to the elementary and high school levels where, incidentally, the population was predominantly Catholic (and presumably more resistant to certain aspects, such as the family planning aspects of population education).

Contraception was included in Health and Science Grade 5.

Prior to its two-year satellite project in selected schools, Wesleyan College undertook in 1971 a knowledge-attitude-and-decisions (KAD) survey of 817 elementary, secondary, and college students from Wesleyan College.[44] The school used a before-after test with experimental and control groups.

This survey showed that changes in knowledge, attitudes, and practices/decisions were more significant among the elementary students than among those in high school or college. The researchers concluded that it was easier to instill attitudinal change among the elementary pupils than among those in the higher levels.

A similar finding regarding knowledge was found during the two-year satellite project. In the elementary level, Grade 4 students scored higher in the achievement tests than those in Grades 5 and 6. How significant is this in relation to the PWU finding that younger students scored higher than the older ones?

Among the subjects, Home Economics was considered the easiest to comprehend. In the high school level, a majority of the high achievers were in General Science, while a majority of the low achievers were found in Biology. Economics revealed a good level of concept-learning, followed by Philippine History and Government and World History.

With regard to knowledge and attitude (knowledge scored according to low-middle-high, attitude according to negative-neutral-positive), almost half of the elementary students exhibited a low level of knowledge of Philippine demographic facts. However, an equal number concurred that large families led to overcrowding.

High school students revealed a wide gap between knowledge and attitudes, with the attitude scores being considerably more satisfactory. While 35 per cent registered positive attitudes to population control, only 5 percent of the 817 examinees knew something about population matters. On the average, three to four was regarded as a small family; 25 was considered the ideal age to marry.

College level evaluation was conducted by field-testing, questionnaires, and a series of dialogues between teacher-participants and coordinators and the Wesleyan staff. These meetings revealed that concepts in the Sociology of the Family were the most understood and that college teachers were more creative. Not one of them followed the lesson formats as written and instead employed mainly the inductive question-and-answer method, role-playing, and group work.

Although there was no problem regarding student interest, two perennial problems arose: lack of reading materials and references and the language barrier. Teachers expressed the need to use Pilipino or a combination of English-Pilipino in recitations and discussions.

Curriculum revision by WPC

Curriculum revision followed in the fifth quarter of the two-year project, beginning in June 1974.

Revision in the elementary level consisted of writing clearer definitions or explanation of terms, especially in subjects like Grade 6 Social Studies where comprehension was low. This included such terms as "census", "pollution", "fertilization", "pituitary gland", "uterus", "puberty", and "contraception". More visual aids like graphs, diagrams, maps, and drawings were produced. They showed, among others, large and small families at mealtime, modern and scientific agriculture, crowded buses, squatter areas, pollution, completed family size of different countries, burden of dependency and its implications on the quality of life, well- and undernourished children, and basic food groups. More effective motivational activities for pupil readiness were formulated, and more topics were introduced into existing relevant subject matters, like burden of dependency in Social Studies 5 and 6, pituitary glands in Health and Science and Home Economics, and stages of the menstrual cycle in Home Economics Grade 6.

It is interesting to note that contraception was included in Health and Science Grade 5. This topic was introduced only much later in the PEP curriculum in Home Economics and Health in third and fourth year high school, and in the PWU curriculum in fourth year high school.

In the high school level, revision was started in Biology and General Science. To pave the way for more population education concepts, the subject of contraception was incorporated into Biology, General Science, and Home Economics.

For greater intelligibility, more illustrations or explanations were done or redone. Examples are the population clock; pollutants; the finiteness of the environment; the meaning of per capita income; the reason developing countries have a more rapid rate of population growth while developed countries have a slower rate; man's accountability for water pollution; environmental depletion due to population growth; and birth, death, and migration as the variables determining population growth.

As suggested by teachers, quizzes and units were constructed for each lesson. In addition, new population education units were recommended for the following mother subjects in the elementary level: Math 1–6 (already done). Social Studies 1–3 (the last already done); and Pilipino. In high school, the mother subjects chosen were Health and Science, Home Economics, Mathematics, and Youth Development Training (YDT) or Citizen Army Training (CAT).

In the collegiate level, revision was concentrated in Sociology of the Family because it was the most used subject. The revision was done along these lines:

1. Reordering of sequences of topics;[45]
2. Further expansion and elucidation of topics, such as including non-Christian Filipinos in the subject "Filipino Family Mores", relating the topic "residence of newlyweds" to fertility (couples living with their in-laws tend to have their first child sooner and continue their jobs because the in-laws solve the baby-sitting problem, unlike those who reside separately), or the inclusion in the topic "History of Birth Control in the Philippines" of the current development that family planning is now a requisite in college and that premarital counselling is a requisite to acquiring a marriage license;
3. Discussion of such topics as taboos or sexual intercourse, and government policies and programs in the light of students' own life experience;
4. Addition of relevant activities and visual aids.

In addition, the WPC got feedback for revision from teachers not included in the project but who nonetheless used the materials, from students taking nursing and population education electives in Education, Liberal Arts and BSHE, from colleges not included in the project but which expressed the desire to use the WPC model for their own population education curriculum development (like Pamantasan ng Lungsod ng Maynila, West Visayas State College, and Central Philippine University), and from social workers of the local Department of Social Welfare working with out-of-school youth.

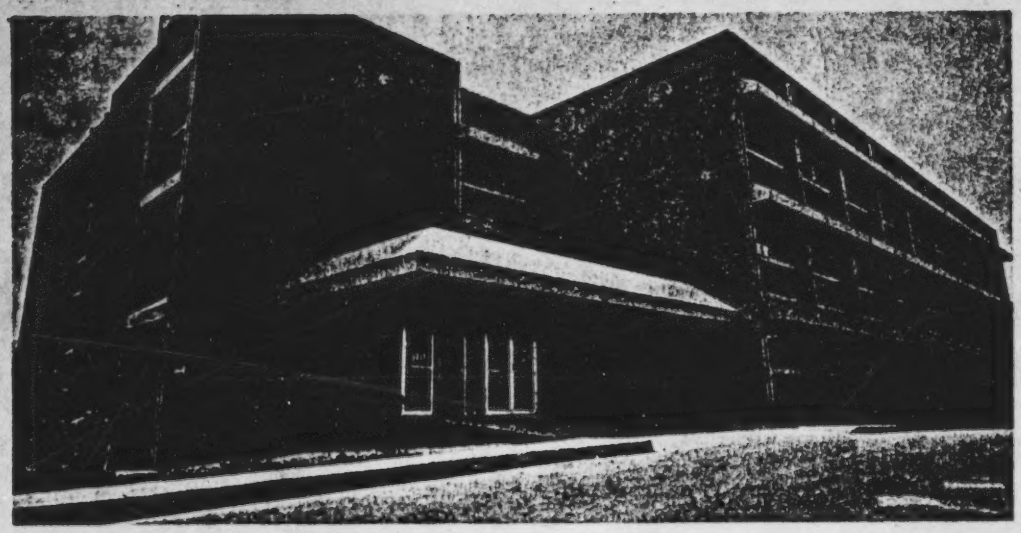
3. The UP-SEC experience

Since November 1964, the UP-SEC has been engaged in evolving new curricula, experimental research, and evaluation, and in teacher-training in science, math, and social studies.

It has been waging a war against curricula that are outdated and dependent on Western models and materials. It has also been batting for making pupils learn by doing rather than by being told (discovery vs. lecture). Its curriculum development ventures in population education are a logical extension of these efforts.

The curriculum development project, which started in 1972, was specifically aimed at incorporating population education into high school biology. The scope and sequence of topics were outlined in a series of work-meetings among science educators and consultants from November 1972 to March 1973.

In 1973, a writing team composed of high school teachers and a Research Associate Supervisor reviewed available literature and



The Science Education Center is housed in the new Educational Development Center at the University of the Philippines in Diliman, Quezon City.

wrote the curriculum content.[46]

Slated for production are four units or modules in all: Human Reproduction, Population Dynamics, Population Control, and Human Ecology. The first two have been tested and revised, while the third is currently undergoing revision. The fourth is still being written. A teaching guide has yet to be constructed by the UP-SEC.

The Human Reproduction unit covers the reproductive system, physical union, conception and motherhood, pregnancy, and the attitudinal topics of developing healthy sexual attitudes, dating, and growing-up problems. The Human Population unit covers the topics of population growth (arithmetic) and structure, and socioeconomic factors affecting the population of societies.

Perhaps because the SEC units are student guides, they are full of specific, concrete, and popularized openers, examples, illustrations, and drawings. One drawing shows the world rejecting a newborn baby with a sign saying "Standing Room Only".

The second edition of two chapters or modules for the textbook has been finished: Human Reproduction and Human Population, which are to be integrated into high school biology, using the discovery method mainly, and role-playing and gaming infrequently.

The first edition of the experimental curriculum was tried out in three schools: a science high school (Philippine Science High) and a rural high school (Los Baños) for second year Biology, and a large city school (Arellano High) for third year Biology. A total of 105 students underwent experimental classes of two and half months in the school year 1973-74. Teachers, who were recommended as among the best by the writers and school authorities, were asked to handle these classes.

This trial use aimed to elicit student and teacher reaction to the text. Particular attention was paid to the feasibility of teaching the topics, student difficulties, feasible objectives for the writers, and the best methods of presenting the materials.

Methods used were questionnaires for students on the text materials and the course work, classroom observations of each school for 2–3 days by the project coordinator, and meetings with teachers.

Student reactions

Student reactions revealed that:

1. Students could not easily understand

Among students' favorite topics were the adolescent period, boy-girl relationships, childbirth, fertilization, and growing problems.

the units without assistance from the teacher. The questions, however, were perceived as relating to the topics, and helpful in understanding the lesson. Graphs and illustrations greatly aided comprehension and retention and were considered crucial to the course. Factors that came into play were clarity, relevance, sequence, sentence length and difficulty, and ability to elicit thinking.

2. The topics of the reproductive system and conception under Human Reproduction appear to be controversial items. They were included among both the "most-liked" and the "least-liked" items by students from all three sample schools. On the other hand, clearly and uncontroversially well-liked by the majority were the adolescent period, boy-girl relationships, childbirth, fertilization, growing-up problems, and sexual maturity. Clearly and uncontroversially least-liked were the genitals, homosexuality, hormonal change, masturbation, and the menstrual cycle.

As regards the unit of Human Population, age structure and problem-solving were items equally liked and disliked by students in all sample schools and, therefore, controversial. Items also equally liked and disliked (though not across the whole sample) were components of population, graphs, and population density. Clearly and uncontroversially liked were birth and death rates, migration, population growth, population explosion, quality of life, and quantity vs. quality. Disliked were demographic transition, doubling time, fertility and its relation to population, growth form, intercensal growth rate, labor force, vs. age structure, marital status, population pyramid, and zero population growth (ZPG);[47]

3. Many technical and non-technical words were found to be difficult to understand;[48]

The preferred method for conducting the course was lecture-and-activities.

4. Students (55-71 percent) said they learned best by "listening to teachers' explanations". This number, however, represents mainly the Manila students, raising the question of whether or not the rural students would be more oriented towards methods other than a verbally-oriented one;[49]
5. The preferred method for conducting the course was lecture-and-activities.

Feedback from teachers confirmed the difficulties cited by students regarding activities, illustrations, graphs, and vocabulary.

Classroom observations revealed that students in experimental classes were more enthusiastic and participated more actively in the course than those in the control classes. They also learned and retained more.

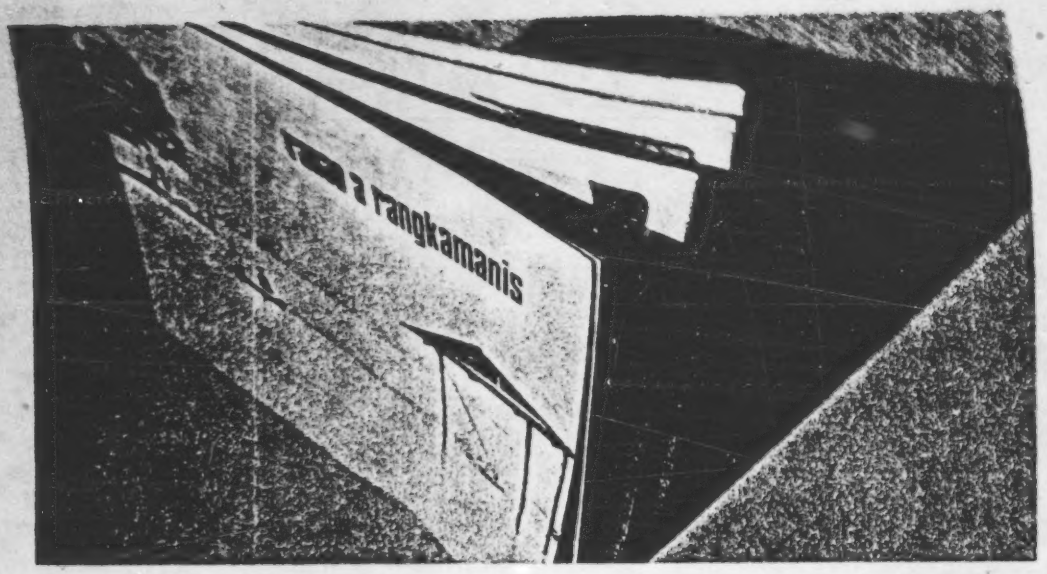
Other findings revealed initial embarrassment with the topics of the female genitals (but none on the male genitals) and secondary sex characteristics.

Direct involvement through field trips on such phenomena as artificial insemination and the birth process was appreciated. So were the discussions of boy-girl relationships.

Suggestions for clarification were given regarding components of population growth, birth and death rates of industrialized and developing countries, doubling time, and multiple births. More visual aids and activities were suggested.

On the basis of this feedback from students and teachers and a review by the SEC staff, a second experimental edition was developed by simplifying content through these means:

1. Reducing the use of, or simplifying both technical and non-technical words (e.g. "egg tube" for fallopian tube or oviduct, "body stalk" for umbilical cord).
2. Gradually introducing concepts and ideas such as "rate" and "density". The SEC is unique in its caution about using the term "rate" because the tryout showed that high school students did not understand it;



At the Dansalan College, verses in the Qur'an relevant to family planning were used and adapted to population education concepts.

3. Introducing activities to concretize ideas (e.g. numbers related to available space for population density), and simple explanations and problems for various concepts like the constant 70 in determining doubling time;
4. Shortening content (e.g. ZPG) to focus on major ideas comprehended by the target group;
5. Making different materials optional for the brighter students and deleting problems beyond the students' capacity to solve (e.g. demographic transition and intercensal growth rate).
6. Using quantitative materials to encourage and develop thinking in quantitative forms by the gradual introduction of interpretative questions.

The feasibility of the second experimental edition is being studied before it is tried on a larger scale. The study is conducted by means of four 1- to 2-hour meetings on each unit with a select group of second year high school students. Questionnaires are administered to check on the comprehensibility and usefulness of initial objectives and to make the objectives more specific for instructional purposes.

4. *The Dansalan College experience*

Compared to the three programs previously described, that of Dansalan College in Marawi City is still in its infancy. However, it merits a separate section because of its attempt to deal with a distinct ethnic group – the Muslim school population.

Like the Wesleyan population education program, that of Dansalan had its inception in its College Community Service. The Service's adult education program conducts classes on literacy and simple agricultural technology and runs a maternity-family planning clinic. However, unlike the Wesleyan, it has not gone far beyond those beginnings.

Initially, population education was confused with, or initially used in the same sense as, family planning education – a not-uncommon mistake.[50] But meetings with PEP advisers soon corrected this notion.

During a workshop on May 13-17, 1974 at Dansalan College, the in-school group worked on the Wesleyan High School curriculum materials for adaptation into the Muslim culture. The group took into account the particular traditional, cultural, and religious background of the target groups and supported concepts by

The program still has to overcome the basic problem of high resistance to family planning among Muslims.

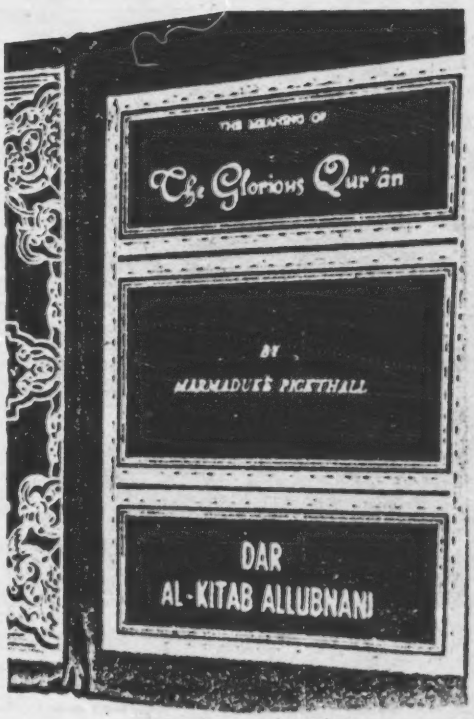
verses or quotations from the Q'uran.[51]

They concentrated on religion, specifically on integrating population education materials into the high school course in Islam. The religious aspect was emphasized because a survey they conducted showed that a majority of the people felt that Islam was against family planning. In response to this, a workshop participant made a careful study of the Q'uran to select those verses that were relevant to family planning. Passages were used and adapted that supported such views as having only the number of children that one can adequately clothe and feed or upholding the sacredness of the family.

In addition, the Dansalan staff developed subunits for integration into Science, Social Science, Vocational Arts, and Health. Put into use for the first time, the curriculum materials will be evaluated in 1976, after a post-test has been run at the end of the current school term. A pre-baseline survey was administered during the last school year. Further material development awaits funding.

The proposed Dansalan population education program still has to overcome the basic problem of high resistance to family planning motivation among Muslims.[52] An attitude survey has revealed a preference for large family size and early marriage (even before they are through with elementary school), the strong influence on attitude and behavior of the *ulamas* or priests, and the prominence of the male role in family decision-making. The preference for a large family is traced to the prevailing Muslim view that big families will bring a sure number of followers in instances where trouble may arise or a family member may go into politics.

Thus the emphasis of the program, as Van Vactor* of Dansalan College explains it, has been directed to concern for the family, the care and attention that parents, as good Muslims, are obligated to give their children, rather than the direct approach of comparing the



large with the small family. Furthermore, the motivational appeal, designed to counter the high resistance to family planning, is of the soft-sell type. It focuses on the need to preserve the richness and beauty of the land for future generations.[53]

In reaction a principal from Dansalan College observes that the school's population education program needs more consultants and personnel to develop curriculum relevant to Muslims, specifically the Maranaos of Lanao del Sur. Currently the College is working on a "pilot design" for integrated population education, information, and family planning motivational materials and activities for various Maranao Muslim groups of Lanao del Sur. For the in-school aspect, the pilot group consists of the Dansalan high school students. For the out-of-school apsect, which is a strong thrust through the Dansalan College Community Service, the target audiences are functional literacy classes, mothers' and fathers' classes, farmers' and fishermen's groups, barrio leaders, and clinic patients.

Population education is integrated within a language program, Pilipino, and within a content-oriented conceptual approach to social studies.

5. *The De La Salle Grade School experience*

The most recent of all these efforts is the population education curriculum program of the De la Salle Grade School, started in school-year 1974-1975. Its innovative aspect is the integration of population education within a language program (population education is carried on in the national language, Pilipino) and within a content-oriented conceptual approach to social studies.

Its objectives are:

a) to make students aware of the basic biological facts about sex and reproduction;
b) to instill value awareness about sex and reproduction within a humanistic Christian tradition;
c) to make the students aware of the demographic dimensions of social and economic development,
d) to let the students become aware of the problem of overpopulation and the necessity of responsible parenthood.

Population education is integrated by means of a workbook/textbook series for grades one to seven, entitled *Isang Bansa, Isang Wika.* Constituting 36 units a year it covers civics, history, political science, economics, geography, anthropology, linguistics, folklore, demography, biology, and programs legislated by the Department of Education and Culture under the headings Nutrition, Land Reform, Taxation, Green Revolution, the New Constitution, Drug Education, and Population Education. Population Education covers 2 units per year and receives focus two weeks out of 36.

The following are the topics by grade level:

Grade One	: Living things of which man is an integral part; man is likewise shown as having membership in various institutions in the community.
Grade Two	: All living things reproduce: plants, animals, human beings.
Grade Three	: Plant, animal and human re-

The De La Salle materials on sex education are the most controversial so far.

production.

Grade Four	: Human reproduction and population.
Grade Five	: Population and population control, family planning
Grade Six	: Ecology and population.
Grade Seven	: Personal hygiene; emissions and menstruation; changes in physical appearance; relationships between the sexes; population growth.

Taking a conceptual approach to social studies, operational concepts are repeated each year, the focus depending upon the sequence of topics. Realistic illustrations are used throughout (including frontal diagrams of the male and female anatomy, a comic-book story of Adam and Eve, and on family planning for Grade 4) and sexual terms are in Pilipino, e.g., *bilo* (testes), *supot* (scrotum), *tunod* (penis), *tamod* (semen), *punlay* (sperm) in male anatomy; *tubo*, (fallopian tube), *itlugan* (ovary), *kaluban* (vagina), and *bahay-bata* (uterus) for female anatomy.[54]

The discussions are given in essay form with exercise and comprehension questions as well as follow-up activities for each day. Because of the particular ideological problem with respect to contraception within the group for which the volumes are intended, discussion of techniques of population control is restricted to the rhythm method in Grade Seven.

Formative evaluation

The workbook/textbook series has been undergoing continuous evaluation for the past two years, by means of systematic gleaning of student reactions in class, formal evaluation done by experts from the Behavioral Sciences Department of De La Salle University, feedback from parents as well as some specialists from the Population Education Program of the Department of Education and Culture, and evaluation meetings among the users of the series.

There is general acceptance among the students, although as Brother Andrew Gonzales, FSC, editor-in-chief, writes, "... in the case of a few, there was amusement (not shock) from the pictures presented." He proposes desensitization of the teachers, many of whom expressed reluctance and embarassment in covering the materials on human reproduction.

It appears that the De La Salle materials on sex education (*Edukasyong Sari*), unique in that they are taught primarily in Pilipino, are the most controversial of all those reviewed here. Gonzales reports: "A few irate parents have turned in formal complaints to various authorities, including some who consider themselves experts in sex education and who found our presentation premature (the children were considered too young to be exposed to the biological facts)."[55]

An example of highly controversial text is the Grade 3 material that shows mother and father in bed, with the following text: "Ang inyong ama't ina'y nagmamahalan at ang kanilang pagmamahalan ay hindi lubos kung wala silang anak. Upang sila'y magkaanak sila'y nagsisiping." (Your father and mother love each other, and their love is not complete until they have a child. To have a child, they have intercourse.)

"Ang ina'y hihiga at ang ama'y dadapa sa ibabaw ng ina. Sa ganitong paraan maipapasok ang tunod ng ama sa kaluban ng ina." (The mother lies down and the father lies on top of her. In this way, the father's penis enters the mother's vagina.)

"Ngayon ang mga punlay ng ama ay maaari nang makipag-tagpo sa mga itlog ng ina." (Now the father's sperms can unite with the mother's ova.)

A simpler version appears in the Grade 2 materials.

It must be noted, however, that *Edukasyong Sari* (Sex Education) is the last lesson (Araling 8) in a sequence of topics for Grade 3, which includes among others, *Ang kagandahan ng kaugaliang Pilipino* (the beauty of Filipino customs); *Paggalang* (Courtesy); *Katapatan at Pagkamatapat* (loyalty and honesty); *Lakas ng Loob at Katapangan* (Courage); *Maliit na ang*

Those who favor the materials comment on its frank, current language that "tells it like it is", and on the humanistic, Christian concepts that are used to introduce concepts in sexuality.

Mundo (The world is getting small – Demography).[56]

One population education curriculum expert further objects to the use of coined words in Pilipino such as *punlog* (fertilized egg). All these reactions are being considered in a future revision.

Others, however, feel that the De La Salle materials are judiciously frank, using popular and current language that "tells it like it is" and communicates directly to the student (e.g., "Pogi", "Okey din", "Relaks lang",[57] or "Sabi ng isang komersyal sa telebisyon, ang kalinisan ay nakikilala sa amoy").[58] They also feel that the materials are sufficiently rooted in humanistic Christian tradition (e.g., the use of the biblical story of Adam and Eve to introduce sexual differences between males and females; the concept of the child as a product of love; or the study of anatomy leading to hygiene), and the use of well-thought out analogies (e.g., the similarities among plant, animal, and human reproduction) and a sufficient variety of illustrative examples.

6. *Other endeavors*

This state of the art of population education has addressed itself only to in-school population education, primarily in the elementary and high school levels. But colleges, teacher-training institutions, and medical schools are quite active in it, too. Universities that offer population education as a degree course or part of one are the University of the Philippines, which offers a master of science degree in population studies, with population education as a major area, and a course leading to a diploma in population communications; and the Philippine Women's University, which offers a bachelor of science degree in education, major in population education.

Medical schools have pioneered in the inclusion of population education concepts. Their clinic-oriented curricula include, under the topic of social preventive medicine, population dynamics, sociocultural factors relevant to fertility control, sex education, and family planning motivation.[59]

In the area of pre-service curriculum development, the National Research and Development Center for Teacher Education (NRD-CTE) is developing curriculum materials for teacher education. Meanwhile, the Philippine Normal College, the national teacher education college of the country, has plans for a Center for Population Education for teacher-training. The Center is to be staffed by personnel whose main concern will be the preparation of curriculum materials for testing in three laboratory schools (kindergarten, primary and secondary), and in-service programs and research.

At the same time, an early and useful input into teacher education programmes is *Readings in Population Education*, a publication of the Family Planning Organization of the Philippines (FPOP).

This summer (1976), the Population Education Program and the Population Center Foundation's Information and Research Utilization Division are sponsoring their second cycle of literature reviews and conferences on the topic of teacher-training. Emphasis is on the issues of training evaluation, values clarification, and teaching strategies.

On the research side, there are a few studies currently being done on population education. De la Cruz* is undertaking a survey for UNESCO of all research in the social sciences done in the Philippines (including Philippine folk demography). His purpose is to find out which of them have implications for curriculum development in population education.

Hernandez* cites a UP-SEC study conducted by F. Landa Jocano in 25 Ilocano barrios on concepts and perceptions of adults, adolescents, and children on the terms used in SEC curriculum materials. She suggests that the study be

replicated through RSDC's across different ethnolinguistic groups with respect to local terminology.

A PCF representative cites the PCF-PEP project which gathered and abstracted local research relevant to curriculum development in population education, and the difficulty the PCF encountered in looking for materials (especially master's and Ph.D. theses) which came up to accepted research standards. Among other things, the PEP is also doing an annotated country bibliography of all local materials on population education.[60]

Agenda for future research

Policy planners and researchers suggest the following leads for investigation:

A. *Basic research*

1. Motivation for the acceptance of family planning and population education concepts in the rural areas (Brual* and Madigan*). As a sub-topic, images of the future as held by rural folk (Lising*);
2. Compatibility of socialization processes of the Filipino child with in-school population education (Baluyot*). This is valuable for curriculum development because the school should start "where the student is" (de la Cruz*);
3. Longitudinal KAP study to find out the effects of in-school population education;
4. Discrepancy between stated preferences and actual behavior relative to family planning;
5. Appropriateness of population learning disseminated through the mass media.

B. *Evaluative research:*

1. Re-examination of conceptual framework (scope and sequence of topics) for population education in the different grade levels (Hernandez*), alongside the current examination of the framework of different disciplines by the national curriculum development centers.(de la Cruz*);
2. Case studies to identify the variables which enhance or inhibit population education efforts in different institutions and schools (Eslao*);
3. Analysis and examination of curricula at all levels to identify priorities among and within enrichment subjects;
4. Further evaluation of the teacher-training program, how integration is actually being implemented by teachers in barrios, the extent of usage and effectiveness of the PEP teacher's guides.

There is a strong move to make research results immediately useful to local needs by decentralizing the sources and capabilities for research.

The UNDP Mid-Term Review mentioned earlier carries a recommendation that empirical and basic research be kept to small-scale pilot studies with practical implications for project development. The Review also suggests that evaluative research be stepped up to include evaluation of curriculum materials and training procedures, and the construction and provision of evaluation instruments and administrative monitoring tools. It also brings up the need for research communication, which participants at the conferences unanimously feel is urgent.

Teachers should be trained to consume and use, and eventually to produce research (de la Cruz*); and principals, superintendents and other administrators should be considered among the research utilizers (Asistin*). Eslao* suggests the state colleges (which offer research courses) as a vast potential ground for researchers in population education on the regional level. As examples, he would like to see agricultural and fisheries colleges doing research on population education relevant to the culture and needs of farming and fishing villages, while trades and arts colleges do research on urban, industrial areas.

In an effort to decentralize research and to institutionalize research utilization in the various divisions, Research and Evaluation Supervisors all over the country have been designated as linkers, and are undergoing training.

The need to decentralize research

There is a strong move to make research results immediately useful to local needs by decentralizing the sources and capabilities for research. Alberto* cites the PEP's two-year study on population learning among the rural youth, which will concentrate data-gathering in the hands of researchers on the regional level rather than of those in Manila.

From March to May, 1976, the UP College of Education, the PEP, and the PCF are sponsoring a Summer Institute for Research Supervisors to equip them with skills for conducting research on the local level and for ensuring utilization of the results of research.[61] The output of the Summer Institute will be a training manual for research and research utilization to be used by the participants in disseminating the skills they have learned to the other Research Supervisors all over the country.

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FOOTNOTES

1 The resulting action taken on these recommendations by the Population Education Program will be discussed in a future publication.

2 This monograph devotes more space to the Population Education Program of the Department of Education and Culture than to any other population education agency, for two reasons: (a) Being the national program, PEP is the most extensively developed and implemented of the curriculum development programs in population education; (b) As the sponsoring agency in the aforementioned research utilization conferences in population education (see Introduction), the PEP invited teachers and supervisors implementing its program and laid before them its curriculum activities and problems for deliberation and discussion. Thus, most of the reactions here recorded pertain to the PEP.

3 Compare these sample definitions:

a. Viederman, S., "Population Education: Towards a Broader Definition", *Social Action,* Vol. 25:

"Population Education may be defined as an educational process which assists the individual (a) to learn the probable causes and consequences of population phenomena for himself and his communities (including the world); (b) to define for himself and his communities the nature of the problems associated with population processes and characteristics, and (c) to assess the possible effective means by which the society as a whole and he as an individual can respond to the influence of these processes in order to enhance the quality of life now and in the future."

b. Population and the American Future, Commission on Population Growth and the American Future, upon recommending enactment of a Population Education Act, pp. 124-125:

". . . . A program of population should seek to present knowledge about population processes, population characteristics,

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the causes of population change, and the consequences of such change for the individual and for the society. We believe that population education should not approach population as a 'problem' to be solved or as a point of view to be promoted. The goal of population education is to incorporate concepts and materials related to population into the school curriculum in order to educate future generations, enabling them to make more intelligent decisions with regard to population matters."

c. Lane and Wileman:

"Population Education is the study of human population and how it affects and is affected by several aspects of life: physical, social, cultural, political, economic, and ecological."

d. Population Reference Bureau, in *Population Education: A Challenge of the Seventies:*

"Population education seeks to bring about a realization of the individual, family, social and environmental effects of the explosive increase in human population, the rapid shifts in the concentration and distribution of people, the implications of changing age and other demographic patterns, and the conceivable options that may be open to mankind to cope with the consequent problems. While it is not confined exclusively to a particular age group, it is focused primarily on students who will become the principal childbearers within one or two decades."

e. Byron Massialas, in "Population Education Through the Social Studies," in Population Reference Bureau, *Population Education:*

". . Population education is defined as the teaching and learning of reliable knowledge about the nature of human population and the natural and human consequences of population change. The main purpose of population education is to help the individual make rational decisions about population matters as a member of his family and community utilizing appropriate information sources and inquiry skills."

f. Asian Regional Workshop on Population and Family Life Education, Unesco, Bangkok, September 1970, as quoted by Viederman:

"Population Education is an educational programme which provides for a study of the population situation of the family, community, nation and the world, with the purpose of developing in the students rational and responsible attitudes and behavior toward the situation."

The PEP definition comes closest to (e) and (f).

4 On the other hand, there was lukewarm commitment to population education in Latin America and Africa (Viederman and Wayland, 1973). In the U.S., it was only in 1972 that the American Commission on Population Growth recommended the enactment of a Population Education Act.

It may be recalled that while popula- education was first developed in the developing countries because of the threat of population growth overcoming economic growth, in the developed countries like the U.S., it was in response to the dangers of pollution, overcrowding in cities, and crime. (Hertzberg, p. 42) in PRB, *Population Education.*

5 Mathematics was later included by the Population Education Program. In Math, unlike the others, which are more or less self-contained subunits integrated into the four mother units, infusion takes the form of sample exercises and problems using population data and processes.

6 As of this writing, the following teacher's guides have been implemented by PEP in the elementary level: in Grades 1 to 6, population education subunits were incorporated into social studies, health education, elementary science and mathematics, and later into home economics in Grades 5 and 6.

In the high school level, social studies

and health education guides have been pilot-tested across all 4 years, with those in mathematics and homemaking for years 1 and 2 only, and in science for year 2.

Attached as Part 2 of each Teacher's Guide is a "Background Information for Teachers" (BIT), numbering about 155 pages, explaining the objectives of and strategies for teaching the curriculum materials and giving selected readings and excerpts on the population problem.

For pre-service teacher-training, a *Resource Book in Population Education for Teacher Education* is being used. Four modules have been prepared for teacher-training and are undergoing field testing.

7 For example, the Grades 5 and 6 Elementary Science subunit entitled "Man's Adaptation to the Environment" is an enrichment of the BPS Curriculum Guide, Elementary Science 5.

8 Viederman and Wayland, 1973.

9 The conferences here mentioned refer to the Research Utilization Conferences alluded to in the introductory paragraphs of this monograph. Names of participants are marked by asterisks. The full list of names and positions appears in the Appendix.

10 Edlefsen, op. cit.

11 See Edlefsen, May 1972, pp. 4-5, and Lane and Wileman, pp. 70-71.

12 The controversy between the integration or infusion approach and the separate course is metaphorically described by Noel David-Burleson as the choice between the "green wheelbarrow," which is a simple technology that has so far served adequately as a conveyor of population education concepts, and the "red fire engine," which is a complex technology needed to respond to crisis situations. (Noel-David Burleson, "The Multidisciplinary Approach: How Can It Best Be Handled?" pp. 79-84, in PRB, *Population Education*, Nov. 1971.)

13 Viederman and Wayland, 1973.

14 Johnston, A., in citing the inverse relationship between schooling and fertility, Population Socialization Conference, East-West Center, December 16-24, 1974.

15 This is of course a dictum in the psychology of learning. The Wesleyan College 1971 K.A.P. survey of 817 elementary, secondary, and college students revealed that changes in knowledge, attitudes and decisions were more significant among the elementary students than among those in high school and college.

16 Edlefsen personally feels that the population boom warrants introducing population education "in all levels of education, all available media, all organizations, both public and private" (*op. cit.* p. 4). See also exhaustive dabate in Jayasuriya, 1971.

17 The PEP Research Unit recently conducted an anthropologically based study on "How Filipino Children Develop Concepts of Family Size." The raw data are now being analyzed and transformed. Twelve teacher-researchers gathered data for 10 months in barrios of 12 ethnolinguistic groups in Luzon, Visayas, and Mindanao. It was found that children develop the concept of family size from three main sources: the environment (by observing sexual reproduction among domestic animals and plant growth), from parents and peers (by answers to questions about where children come from, by teasing, and by cursing), and from cultural sources (such as folktales, do's and don't's regarding sex, and language used to identify basic social structures).

18 Some judge the PEP curriculum materials to be relatively mild, conventional, and neutral when it comes to controversial topics. For example, contraceptive methods are treated in the context of marriage, and sexual organs are treated in the context of hygiene. (Carmelita Villanueva, citing interview with R. Cayari. See monograph on human sexuality).

19 Byron Massialas suggests that PEP make explicit the theories it uses, particular-

ly the discovery approach, to guide the teachers in relating specific activities to concepts and generalizations (1974). This is especially crucial as regards effective and controversial content so that teachers can encourage the valid method of valuing as a classroom process, and avoid becoming "indoctrinators." As regards the controversial topic of family size, teachers, despite their efforts at objective presentation of advantages and disadvantages, often cannot help moralizing. This statement is an example of such moralizing: "So, when you grow up, will you practise family planning?" (Interview with Tudtud and Alberto, October 1975 by Ma. Felicitas Reyes and Carmelita Villanueva, September 1974).

20 This is not an unusual procedure. The Lane and Wileman book, *Structure for Population Education,* was developed not so differently: goal determination was done through a study of the writings of recognized authors such as Viederman, Wayland, and Burleson, as well as of national and international committees, commissions, and curriculum guides for population education; generalizations were selected by examining structures of knowledge for the social science and science disciplines as presented in current textbooks, as well as population generalizations found in curriculum guides and instructional materials; behavioral objectives were written after the models provided by Julie Vargus' *Writing Worthwhile Behavioral Objectives* (New York, 1972), and Robert Mager's *Preparing Instructional Objectives* (Belmont, Ca., 1962). No new basic research was undertaken beforehand.

21 R.M. Cayari, "The Development of Curriculum Materials for the Elementary and Secondary Levels of Philippine Schools", February 1975 paper.

Specifically, the four objectives of the Population Education curriculum are:

a. To acquire knowledge of:

(1) Basic population concepts, processes and measures,

(2) Fertility, mortality, and migration behavior of people over time and space;

(3) Values, beliefs, and practices of society which influence fertility, mortality and migration;

(4) The effects of rapid population growth and other population changes on economic development, food production, health education, and other government services, the physical environment and natural resources, and the sociological and psychological aspects of people's lives;

(5) Population issues;

(6) Sexuality or the human reproductive processes.

b. To develop rational and responsible attitudes and behavior toward family size and other population matters, including:

(1) Concern about family size and other problems brought about by population growth;

(2) Appreciation of the fact that population growth can be controlled;

(3) Appreciation of keeping the family small to have better quality of life for its members.

c. To acquire skill in planning and decision-making, for planning and deciding on population matters now and later in life.

d. To improve one's ability to learn by participating in classroom activities which employ a variety of teaching strategies with emphasis on the discovery approach and less emphasis on lecture.

22 As deduced from Benjamin Bloom, et. al., *Taxonomy of Educational Objectives,* N.Y., 1956, by PEP Handbook p. 18.

23 These are similar to the seven topics defined by Lane and Wileman which, however, are more specific and mutually exclusive: (a) Human reproduction and family planning; (b) Family size and standards of living; (c) Basic population and demog-

raphic terms, (d) Population and the environment; (e) Population and the economy; (f) Population policies and programs in this and other countries and (g) Growing personal and collective efforts on the population phenomenon. These goals achieve a balance of macro and micro concerns, and of the three relevant areas of sex education, family life education, and environmental education.

Dr. Nena R. Bustrillos of the University of the Philippines, College of Agriculture, Los Baños, lists two ways of identifying the body of knowledge for a family-oriented population education curriculum: (a) identifying macro components, namely: population, national resources, ecology, and national planning; and parallel micro components, namely: family, family resources, environment, decision-making, and family goals; and (b) determination of relevant topics such as (I) Demography, to include (a) Population Growth, Distribution, and Density, (b) Mobility, and (c) Age Structure; (II) Home and Family Life, to include (a) The Family, (b) Family Role, and (c) Human Sexuality; and (III) Ecological Impact. Bustrillos approaches this article from the point of view of integrating family life education in rural development. She appends a "Resource Unit on Population Education for Home Economics", on the subject of Growing Up, consisting of major concepts, overview, objectives, and suggested learning activities. (pp. 8-12, *op. cit.*).

Another useful outline of the content of population is Viederman's. He divides it into 4 general categories, with their respective sub-categories:

1. The Population Situation
   a. Size
   b. Growth
   c. Distribution
   d. Migration
   e. Composition
   f. Trends
2. Population and the Quality of Life
   a. Food
   b. Health
   c. Education
   d. Employment
   e. Urbanization
   f. Environment
   g. Socioeconomic development
   h. Political System
   i. Family Life
3. Action Programme
   a. Public Policies and Programmes
   b. Individual Family Choices
4. Human Reproduction
   a. Human Physiology
   b. Human Sexuality
   c. Family Planning, including Contraception and/or Infertility

(From "Population Education: Towards a Broader Definition," *Social Action*, Vol. 25, p. 12)

Educators have spoken also of a need to specify a unifying conceptual theme to guide curriculum development across grade levels. Robert Stegner of the University of Delaware Population Curriculum Study Group, which worked on a K-12 program of population environment studies, chose the guiding concept: "Man is part of a natural system, the Earth, and is ultimately subject to the limits of that system." Population Reference Bureau, *Population Education*, p. 14.

24 Stephen Veiderman, in assessing the results of the Bucharest World Population Conference, is of the same opinion. He states that ". . . . the media's focus on 'crisis' oversimplifies the process of change and also tends to obscure more basic lessons for population educators." ("Lessons Worth Learning," *Interchange*, Vol. 3 No. 4, p. 1)

25 An interview with the Curriculum Unit nine months after the supervisors' conference reveals that such a recommendation was put into action. Under a UNESCO grant, self-learning units, mostly on population dynamics, are currently being tried out for Grade 6, to target pupils at the cut-off point where dropout rate is highest. Titles

include *Edukasyon – Ngayon at Bukas, Pandarayuhan* (Migration), *Ang Tao* at *Ang Likas na Yaman* (Environment), *Bakit Kaya?* (Consequences and Determinants of Population Growth). (Interview by author with Cayari, R. February 26, 1976.)

26 De la Cruz cites the research conducted on this issue at the U.P. High School as the basis for this policy (Interview with L. de la Cruz, January 1976).

27 Twenty-five outstanding research supervisors nationwide who were trained in research utilization in population education in a summer program (sponsored by the Population Center Foundation, the Population Education Program, and the University of the Philippines) in April and May, 1976, have centered specifically on this problem for their first research utilization activities in the division.

28 Nena Bustrillos, in above-cited article, concurs: "In fact while planning family size is a difficult entry point, planning better family living is a good one," p. 12.

29 Seventh Quarterly Progress Report, p. 7.

30 Gustavus, Susan O. and Carl A. Heuther, "Population Education in U.S. Schools: A Status Report," *Family Planning Perspectives*, Planned Parenthood Federation of America, Inc.

31 See monograph "On the Effectiveness of Discovery Approach as a Teaching Method in Population Education," by C. Villanueva.

32 "Teacher's Guide in Population Education for Elementary Science," Grades 5-6, p. 5.

33 Byron Massialas comments on the current program as assuming "that exposure to cognitive information will result in attitudinal and behavioral change" (December 1974).

34 Dr. Frank Wileman, interview by author and mimeographed report, Chapel Hill, North Carolina, November 1975. For further information on values clarification, the basic book is by Louis E. Rath, et. al, *Values and Teaching* Charles Merrel Publishing Company, 1966, while Sidney Simons et. al., *Values Clarification*, Hart Publishing Company, Inc., 1972, explains a selection of teaching strategies. A literature review on values clarification is being prepared for the second cycle of research utilization conferences on population education in Summer 1976 by the Information Division.

35 Estefania Aldaba-Lim and Lourdes Cubarrubia-Reyes, *Education for Human Relations*, Courses 1 & 2, Phoenix Press, Q.C., 1957 (a Unesco publication).

36 During interview by this author with Viederman, New York, October 1975.

37 However, the UNDP team that did a mid-term review of the Population Education Program in September 1975 strongly recommends cessation of formal echo seminars and the adoption of just such a type of informal training (e.g., peer teaching) of the teachers who have not had the prescribed one-week training. (J.A. Johnston, P. Lorenzo, T. Eastwood, and J.E. Jayasuriya, September 13, 1975).

38 Since then, PEP Regional Coordinators, one per region, have been assigned and have received formal orientation. The coordinator will, among other things, serve as liaison officer between the PEP, the Regional Office, and Division Offices, help plan population activities in the region, and confer with school administrators, superintendents, and other agencies on the implementation of the goals of the Population Education Program.

39 During author's interview with Dr. Estefania Aldaba-Lim after the research utilization conference.

40 Massialas, "Population Education Through the Social Studies," p. 70, in Population Reference Bureau, Inc. *op. cit.*

41 PEC Final Report 1972, p. 39.

42 "Philippine Wesleyan College, Annual Report," May 1973 – April 1974.

43 The preface to the Wesleyan's Third Quarterly Report, p. ii.

44 This KAD study was conducted to determine the effectiveness of the Wesleyan population education curriculum with

short-term goals of changing attitudes of individual students toward family planning and convincing them of the advantages of limited family size. Close-ended questionnaires, written in Pilipino for the elementary students and in English for the high school and college students, were administered. Analysis revealed that:

a. Within the experimental group, changes in knowledge, attitudes, and practices/decisions were more significant among the elementary students than among the high school and college students.

b. A majority of the control and experimental subjects preferred from the start a small family size of 0 to 4 children, which is well below the Philippine average of 6.8. The number of subjects (preferring small families) increased remarkably among the experimental subjects after the post-test (especially among the elementary pupils), but not so among the control subjects, indicating that exposure to population education made the difference.

c. The latent effectiveness of the population education curriculum in changing knowledge, attitudes, and practices/decisions was affected by the length of time allotted to teaching the units.

45 Some helpful examples of sequence-reordering are quoted herein: Subject matter D, "Factors Tending to Maintain High Fertility", was made to follow Subject Matter B,. "Sociocultural Factors Restraining Fertility" before taking up Subject Matter C, "Factors Tending Either to Increase or to Decrease Fertility". The logic is that the negative or positive factors of a given subject must first be dealt with before considering factors which have both implications or effects, thus providing for a more systematic study.

In another instance, Topic B, "Restraints on Conception", was made topic of Subject Matter B, "Sociocultural Factors Restraining Fertility". Students' interest in the topic was found to be so great as to tend to edge out other topics in the lesson. By the time the discussion of the topic was finished, the students' initial interest had subsided so that more often than not, they would pursue the remainder of the subject matter with less enthusiasm and energy. Besides, not-too-knowledgeable teachers would need to invite competent speakers on contraception, and this would be more appropriate for culminating the unit. Pp. 14-15, *6th Quarterly Report,* Philippine Wesleyan College.

46 Interviews are being conducted in Laoag on the way people perceive certain terms and phenomena. Results are not yet available at the time of writing.

47 These are outlined in Table 2, "The Most Liked and Least-Liked Topics", D. Hernandez' report.

48 See list, Table 3, op. cit.

49 Ibid.

50 Ledesma, M. J. "Report on Dansalan Project", PEP files.

51 The out-of-school group worked on functional literacy and population education for mothers, farmers, youths, and madrasas (religious schools).

52 It is interesting to note that a similar stance is adopted by the National Family Planning Board of Indonesia, a country whose population is 94% Muslim. Rather than emphasizing the economic need for and benefits from family planning, IEC efforts emphasize the goal of improved health and education for one's children as part of responsible parenthood. (Interview by author with Dr. Bahroen Dipo, Special Assistant to the Minister of Religious Affairs, Jakarta, and Head, Family Planning Implementing Unit, June 22, 1976, Manila.)

53 A backgrounder on the Muslim stand on population control may be interpreted in several ways. In a television statement, Cesar Majul of the University of the Phil-

Ippines cited the following from the Academy of Islamic Research in Cairo (1965).

"1. Islam is desirous of increasing the offspring insofar as it strengthens the Islamic community socially, economically, and militarily and furthers its dignity and defense. From the religious viewpoint, it is not permissible for the government to frame laws prescribing individuals to practise birth control in any manner."

"2. The abortion of a child in the womb with a view to control birth or adopt means leading to barrenness or sterilization are practices contrary to Islamic Law and it is not permissible to the spouses or any other person."

On the other hand, the 1971 Morocco International Conference cited the following, quoting the Shari'a (Holy Law of Islam)

"3. The Shari'a allows the Muslim family the necessary latitude to enable it to regulate its life in such a way or ways as would lead to a balanced procreation either for increasing or decreasing its size, and for helping parents to overcome the handicap of sterility and for spacing the incidence of pregnancy, making use in all such cases of safe and legitimate methods of contraception."

"4. The question of sterilization was fully discussed by the Conference and the trend was to adopt the findings of the Islamic Research Council in Al-Azhar regarding this matter, namely, that the use of sterilization methods are against Islam and must not be practised either by the parents or by others."

In June 1972, a conference among two prominent physicians and seven influential *ulamas* from all over Indonesia was called by the Minister of Religious Affairs. Asked to take a stand regarding family planning, the *ulamas* stated that Moslem law says that family planning is acceptable (*mubah*) or a matter of individual conscience; but that abortion and sterilization are forbidden (*haram*). Contraceptive methods sanctioned (*mubah*) are rhythm, withdrawal, jellies, condoms, and pills. IUD is allowable in very urgent cases, such as the mother's ill-health. (Interview with Bahroen Dipo, as cited above, June 22, 1976.)

54 Lilia Sta. Ana, *Isang Bansa, Isang Wika*, Grade 4, B. p. 235.

55 Gonzales and Jimenez, "Population Education in La Salle Grade Schools," May 1976.

56 Andrada, Domitila, C. *Isang Bansa, Isang Wika*, Grade 3, p. 315.

57 *Isang Bansa, Isang Wika, op. cit.*, pp. 233-234

58 *Ibid.*, Grade 5, B., p. 257.

59 The programs of Colleges of Medicine at the UP, UE, FEU, UST, and others are mentioned in Solis, A.T., "A Review of Population Education Curriculum and Courses in Philippine Schools," in IMC-Unesco Project on Research, Development of Materials and Training on Family Communications, First Progress Report, Jan.-February 1972, pp. 327-386. This report gives a useful cursory review of population education efforts *before* the PEP and the programs of the main agencies here mentioned were set up.

60 Its projects were mentioned earlier in this paper.

61 By means of a module on research utilization, the research supervisors are being trained to be linkers for population education within their respective divisions. (The module, *Using Information for Problem Solving: A Research Utilization Module for Population Education*, by Ma. Felicitas Arellano-Reyes is currently being evaluated and revised for future use).

ABSTRACTS

BOHN, COYLENE, And others.

A study of teacher characteristic as predictor in the successful implementation of an innovative curriculum. *Texas University, Austin. Research and Development Center for Teacher Education. Office of Education (DHEW), Washington, D C., Bureau of Research. 1968. 11 pages; Report series No. 12.*

A change that has taken place in the methodology of teaching science — from teaching to how to process information from experience — has led to questioning whether a relationship exists between selected teacher characteristics and success in teaching such a curriculum. Factors of sex, grade level taught school district, years of teaching experience, and academic preparation in science were examined for significance. A sample of 110 elementary teachers from six school districts were participants in an in-service teacher education program prior to teaching science using the process approach. Student achievement, which was used as an index of teaching success, was assessed by administering the AAS Competency Measure at the conclusion of each exercise. A minimum of six exercises were taught by each teacher. Multiple linear regression analysis showed that the variables of sex, grade level, school district, years of experience, and hours of science accounted for 45% of the variance in the student achievement score. Of these, sex, grade level, and years of teaching experience made significant independent contributions to predicting teacher success.

BURLESON, NOEL-DAVID, And others.

The time is now: Population education. A commentary and annotated bibliography. *Harvard University, Cambridge, Massachusetts. Graduate School of Education. May 1969. 36 pages.*

The commentary which introduces this 72-item bibliography briefly outlines the scope and significance of population education, and comments on a few of the items included. Most of the items have to do with population awareness. Several are geared for direct classroom use, such as teacher's guides and model curricula. Dates of materials included range from 1956 through 1969. The author states that radical

change is overdue in education, and population education is only one attempt to bring education into the 20th century.

CUARESMA, CLEOTILDE R.

Attitudes of a select group toward birth control. *Master's thesis, Araullo Lyceum, 1973.*

Two hundred thirty rural folk with ages ranging from 20 to 30 who were either married or unmarried were randomly sampled in this study to identify birth control attitudes of Filipino rural folk in a Nueva Ecija town. An interview schedule utilizing a 20-item attitude scale called "Attitudes Towards Birth Control" was administered to the respondents. Statistical tests revealed that sex and civil status are not determinants of a low or a high acceptance of birth control ideas. Educational attainment is a factor in the development of favorable attitudes towards birth control. The study, therefore, recommended that further studies be made to discover factors that influence the development of people's attitudes towards the family planning movement. Curriculum planners should include more units in population education in courses such as social studies, language arts, and elementary mathematics. School officials should also send more teachers to seminars on family planning and population education.

JAYASURIYA, J. E.

Population education and the school curriculum. *Bangkok, Unesco Regional Office for Education in Asia, 1972.*

Provides broad perspectives of population education at the school level by defining the term "population education", discussing the areas it covers, and the problems involved in introducing it into the school curriculum. The objective of a course in population education is to give learner an insight into the totality of issues connected with population. These issues range from the nature, measurement, causes, determinants and consequences of population growth, both at the macro level of the community and the nation and the micro-level of the family, to the dynamics of the reproductive process and the possibilities of planning family size and population growth. Population education, therefore, should cover these areas: collection and analysis of population data, population growth and human development, problems of urbanization, psycho-social aspects of human sexuality, the reproductive process, and population education into the school curriculum, the following should be considered: (1) The views of parents regarding the advisability or the appropriateness of including certain topics. The best policy would be to act in accordance with parental wishes, introducing topics which are noncontroversial and acceptable. (2) Preparation of teachers to handle population education. Materials given them should be comprehensive and should combine all elements of population education so they could teach the subject with accuracy and confidence. (3) The age levels at which different topics should be introduced and the key concepts to be emphasized at each age level. There has been some amount of controversy regarding the age level at which materials on population education should be introduced. Arguments for introducing population at the elementary level are (a) the high enrolments in the elementary grades (i. e., population education should be introduced in the grades to reach the largest number of children), and (b) the curriculum provides a great deal of flexibility for the introduction of new materials. On the other hand, arguments for the introduction of population education in the secondary level are: curriculum materials are easier to prepare, enrolment is low and hence, the number of teachers required to introduce the subject would be smaller, and secondary school students are only a few years removed from the time they would make decisions regarding marriage and reproduction and therefore a program of population education would be more meaningful to them. (4) The subjects through which topics on and key concepts of population could be introduced. The approach should be to introduce the population-related materials through such subjects as literature, history, geography, social studies, mathematics, general science and health education (5) The lack of relevant research data especially on the issue of motivation. The effective inculcation of the small family norm requires, among others, an understanding of the motivational basis for the large family norm in different sociocultural groups.

KARPUS, ROBERT

Some thoughts on curriculum development. Presented at Cubberley Curriculum Conference, *(Palo Alto, California, May 7 – 9, 1969) 11 pages.*

Reconciling large-scale use of common materials with the unique nature of each classroom grouping is the central problem of the curriculum developer. Certain generally applicable educational principles can aid in coping with these problems when coupled with empirical testing of all materials with children and/or teachers. But the payoff of curriculum development is what happens to teachers and children in the classroom. Curriculum evaluation is concerned with describing this result. Evaluation studies have to take place when the materials have stabilized. At the same time, however, the studies have to last long enough to examine longitudinal implications. The tradition of educational evaluation has unfortunately concentrated on the achievement of the individual child and has paid no attention to the objectives to which teachers actually use curriculum materials, and the classroom processes through which teachers try to attain these objectives.

LANE, MARY TURNER, AND WILEMAN, RALPH E.

A structure for population education. *Carolina Population Center, University of North Carolina, 1974.*

The purpose of this book is to define a structural framework of *what* to teach rather than *how* to teach as a guide to anyone who wishes to learn about, teach, or plan curricula from first graders through high schoolers. The authors have defined population education as "the study of human population and how it affects, and is affected by, several aspects of life: physical, social, cultural, political, economic, and ecological." An extensive literature review of writings of recognized authors, national and international instructional committees and commissions, and existing curriculum guides was undertaken. Graduate students from various countries involved in population and public health studies formed the staff support for what they called the "search of a substance of population education." From the extensive literature review, it was discovered that the literature in population education provided more information on *how* to teach rather than on *what* to teach, and that teachers need the specifics of what population education is before they can teach it effectively. Population education can be integrated into existing study courses in other disciplines such as social studies, economics, science, ecology, geography, humanities, and mathematics. In this regard, a generalized structure for a systematic course in population education from kindergarten through high school, giving attention to scope and sequence, can be drawn up to assist learners, teachers, and curriculum planners. However, population education can also evolve as a distinct field of study, without having to be integrated into any major subject. The authors recommend the adoption (as a framework and not necessarily in toto) of a generalized structure for the systematic study of population. Structure is used here in the Brunerian sense of organizing ideas and concepts essential to understand a particular discipline, as well as those processes generating new knowledge. The book itself contains four parts: (1) an overview of the population phenomena, (2) elements of the structure (goals, generalizations, and behavioral objectives), (3) ways by which the structure can be used in planning courses and bridging the gap between *information* about population and *teaching* about population, and (4) appendices providing annotated materials for the teacher and for the learner, a bibliography of significant radings, and descriptions of population agencies and population education centers. The goals are to develop understanding and attitudes about seven major areas: human reproduction and family planning, family size and standards of living, basic population and demographic terms, population and environment, population and the economy, population policies and programs in this and other countries, and the growing personal and collective effort of the population phenomenon. Supporting each goal are several generalizations – clear-cut statements of the main idea. To help the teacher evaluate whether the generalizations have been internalized by the learner, visible criteria called behavioral objectives are prescribed for each generalization, consisting of observable behavior, i.e., what the learner does to demonstrate his

learning, and criterion measures of quantity, quality and time. Language used throughout the structure is cool and rational, carrying as little judgmental value as possible. This does not preclude, however, the importance of value exploration and value clarification in this highly affective field of inquiry.

MILLARE, LEON B.

Five special studies on the teaching of biology. *Master's thesis, University of Baguio, 1972.*

This study dealt with (1) the objectives, materials and methods of teaching biology, (2) the qualifications of biology teachers, (3) the modes of enriching biology teaching, (4) biology teaching in Asian countries, and (5) biology teaching in the United States as compared with that in the Asian countries. A literature review of biology textbooks, periodicals, and some research studies was employed to gather the needed data. Information gained from the literature review was confirmed and validated by biology teachers and some personnel of the National Science Development Board. Results of the review showed that biology is taught in schools and colleges to develop certain basic objectives and that biology teachers are the vanguard of scientific knowledge. Biology teaching could be enriched through various methods and techniques, but the heterogenous nature of the learners requires individualized science instruction. In some Asian countries biology is not held in high regard due to a lack in teaching facilities. In others, biology has set the pace for excellence, as seen in recent strides in food production. The United States has excelled all other Asian countries except Japan in all aspects of biology teaching. The study recommended that the objectives and methods of teaching biology in schools be geared towards the checking of world-wide insufficiency of food and that a consortium be established among Asian countries to develop Asian norms, textbooks and laboratory equipment for teaching biology. There must also be some sort of professional exchange among Asian countries and biology teachers must undergo a series of in-service training to foster exchange of biological culture and knowledge.

NATKIN, GERALD L.

Research and theory on the effects of instructional sequencing. *Bucknell University Lewisber, Pennsylvania. Office of Education (DHEW), Washington, D.C. June 1970. 27 pages.*

Although previous research has indicated no significant relationship between sequencing of programmed instructional materials and terminal achievement, it is felt that certain conditions might produce such a relationship. In order to test this idea, a hierarchy of word meanings was constructed, in which each definition was dependent on the previous one. The hierarchy was divided into several different linear and scrambled versions according to the amount of memory and information reorganization required to learn the material. The linear and scrambled versions were then administered to two groups of 80 high school students. Factoral analysis of results showed a significant difference in achievements between students using the linear version and those using a scrambled version for the lower degrees of memory requirement. However, there was no difference in achievement at the higher levels to memory requirement. Conclusions were that sequence does have an effect in programmed instruction when a certain optimal memory load is not exceeded, and that further research should be done on the learning mechanisms involved in programmed instruction.

PAISLEY, WILLIAM

Sources of information on social issues: education, employment, public health and safety, population, etc. A brief guide for journalists and others. An occasional paper from ERIC at Stanford. Stanford University, California, ERIC Clearinghouse on Educational Media nd Technology. *Office of Education (DHEW), Washington, D.C. 36 pages.*

An introduction which explains the value of information centers in aiding the flow of knowledge in person-to-person communication of information if followed by references to print sources and information centers. Print sources, listed to show continuity in the "people-print-people" cycle, are offered on the subjects of education, public health and safety, business, labor, employment, economics, and government. In addition, the directories of the National Referral Center for Science and Technology which lead the search to other sources of information,

are described. Information critics are listed according to the same subject areas as the above print sources. Each reference contains a brief descriptive passage.

Population and Family Education. Book II. Draft sample. Instructional Materials, Social studies. *United Nations Educational, Scientific, and Cultural Organization, Bangkok, Thailand. Regional Office for Education in Asia, 1972. 142 pages.*

Produced by participants at the UNESCO Regional workshop on Population and Family Education held in Bangkok, Thailand in October 1970, the instructional materials intended for elementary and secondary students are to be considered sample first draft materials usable for reference by groups responsible for designing population education curricula in individual countries. The objective is to help students become aware of the advantages of family planning in terms of better health, interpersonal relationships, and quality of life for the welfare of not only the family but also the community and the nation.

SHAVER, JAMES P. AND LARKINS, A. GUY

The analysis of public issues: concepts, materials, research. Final report. *Utah State University. Logan Bureau of Educational Research, Office of Education (DHEW), Washington, D.C., Bureau of Research. October 1969. 304 pages.*

The social studies report presents the results of curricular research to develop a set of "critical thinking" concepts appropriate for the analysis of political – ethical public issues and to prepare materials and suggestions for teaching those concepts. The analytic concepts, presented in both outline and narrative form, are: the nature of decisions about public issues, the need for order, the nature and importance of language, arguments over words, disagreements over facts and disagreement over values. Thirty-three "teaching bundles" detail suggestions for teaching these concepts. The report also describes efforts to repeat and extend the research of the Harvard Project, which investigated the effects of two teaching styles (Socratic and recitation) and the interactions of student personality with teaching style in affecting learning.

SIDNEY, LESTER

Redefining the social studies curriculum. *ERIC, Ateneo de Manila University, Diliman, Quezon City and Population Center Foundation, South Superhighway, Makati, Rizal.*

The author makes several observations on the hodgepodge nature of current social studies programs and the lack of functional statements of the means and ends of social studies education. He offers a functional definition: social studies is that portion of the general education curriculum the purpose of which is to make students more rational with regard to human behavior and social interaction. The author interprets the criterion of rationality of the terms "social interaction" and "general education", and points out the usefulness of this definition for teachers and curriculum designers in making decisions about what they do.

STEGNER, ROBERT W.

Characteristics of a Model K-12 population education program. *Paper presented at the College and University Meetings, National Council for the Social Studies, New York, N.Y. November 24, 1970. 10 pages.*

The Population Curriculum Study of the University of Delaware proposes a school program to develop a comprehensive knowledge and understanding of man in his environment. The central theme of the study is: Man is part of a natural system, and is ultimately subject to the to the limits of the system. Population education should not merely be training to bring about a decline in the population growth rate but rather should serve as the central theme of the entire educational enterprise, encompassing the needs and behavior of man, his population and his environment, and the interactions of these forces. Using this definition, many aspects of population education can already be identified in existing school programs. Existing curricula have a good deal of content that are related both directly and indirectly to population-environment studies, which can be used without disruption of existing programs. To prepare a population-environment education program under these circumstances, the first need is a conceptual scheme should be L-12, multi-disciplinary, and

problem-solving in approach. Obviously, population problems cannot be solved in the schools, but the schools can help students to attain concepts of the natural systems, for democratic decisions.

VIEDERMAN, STEPHEN

Developing education programs on population awareness. *American Association of Colleges for Teacher-Education, Washington, D.C., Organization of American States, Washington, D.C., Department of Educational Affairs. 20 October 1970. 11 pages; Paper presented at Conference on Education and Environment in the Organization of American States, American Association of Colleges for Teacher Education, Washington, D.C. October 20, 1970.*

Speakers on population often refer to the population explosion with an air of crisis. However, it is questionable that the invocation of doomsday images is defensible for educators. The goals of population education are to develop an understanding of the impact of population characteritics on national development as well as on the individual, and to develop informed individuals who will make responsible decisions. More than 20 countries are now developing population education programs which will require the creation of a population unit or cell within these countries' educational system. The final decision is whether population concepts should be introduced through the existing curriculum. Population learning will probably be more effective if children are presented with population material throughout their entire school careers. Social studies offer particularly fruitful areas for population learning. Population study should be part of teacher training.

VIEDERMAN, STEPHEN

Population education in the United States: a preliminary report to the Commission of Population Growth and the American Future. *Population Council, New York, N.Y. May 27, 1971. 18 pages.*

This report is primarily a statement of needs which will hopefully be used as a basis for formulating a national policy that places a high priority on population education. It sets forth a definition of population education, its relationship to other parts of the curriculum, general content and objectives, and some observations on the present status and future directions of population education in the United States. Throughout, there is an emphasis on population education as a process of understanding population characteristics, processes, and changes, and the interaction of these phenomena with individual lives — as opposed to viewing it solely as the cause of environmental degradation. The report concludes with a memorandum to the Commission on Population Growth and the American Future setting forth the specific efforts that increased funding might support. These include: research and development centers, materials development, teacher-training programs, and model programs. The appendix contains a preliminary list of available instructional materials and children's books, as well as a list of institutions concerned with population education.

VIOLETA, SALVACION VILLAFLORES

An ecological study of four microhabitats (grassland, brush, cultivated and forested areas) with a proposed resource unit on ecology for Grade six. *Master's thesis, Silliman University. June 1972.*

The objective of this thesis was to study an ecosystem typical of a barrio and town elementary school in the Philippines, and to use them in building a teaching unit in ecology for Grade 6. Values of light intensity, pH (acidic or alkaline), temperature, and moisture of the soil, the relative humidity and biotic factors of the environment were measured during a fieldwork of the Biology Garden of Silliman University between December 23, 1971 and February 27, 1972. Observations of patterns related to plant and animal stratification, distribution and interrelationships of the living and non-living components of the microhabitats studied were made. Results showed that the general physical conditions of the area studied were similar. However, marked differences were observed. The

grassland was acidic, the forested areas and alkaline soil, the cultivated and brush areas had slightly acidic soil, and the number of animals in the cultivated and brush areas was less compared to those in the grassland and forest. This thesis did not give recommendations; instead it proposed a resource unit on ecology for Grade 6.

WAYLAND, SLOAN R.

Issues and problems in introducing population education. ***Bangkok, Unesco Regional Office for Education in Asia, 1972.***

The problems and issues involved in introducing population education into the school curriculum have been organized under six basic question. They are: (1) Why should population education be considered for inclusion in the school curriculum? (2) What specific aspects of the proposed new subject area are most appropriate for the school system? [The following elements should be considered: the nature of the learner, characteristics of the relevant bodies of knowledge – social science, mathematics, biology, ecology, family life and sex education, goals of population education, and structure of the education system.] (3) What changes would have to be made in the existing features of the educational system to establish the new program on a sound and continuing basis? [Some of the necessary measures are: modification of the pre-service training of teachers, in-service education of those who are already teaching, work with supervisors and inspectors to insure implementation of the new program, and establishment of effective feedback from teachers to facilitate the identification of problems in the field.] (4) Are the expected outcomes commensurate with the investment of time, personnel, and resources that will be required? (5) What steps need to be taken to introduce the changes? [The following specific actions should be considered: background research; assessment of available work concerning knowledge, attitudes and practices; survey of existing curriculum and syllabi; identification of general curriculum reform efforts; use of general curriculum reform efforts; use of pilot projects to perfect a new approach before introducing it on a national scale; building public and professional support; training of professional leadership; development of basic reference books; collaboration with other public and private organizations.] (6) Are the resources that are needed to effect introduction of population education available or can they be made available?

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Dapitan, Sampaloc
Manila

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Koronadal Pilot Elem School
Koronadal, South Cotabato

Miss Eleuteria Miralles
c/o Division Office
Dipolog City

Edgar Parungao
National Teachers College
Manila

Miss Eva Puertollano
Palo Central School
Palo, Leyte

Mrs. Erlinda V. Ramos
San Nicolas Elementary School
San Nicolas, Calasiao
Pangasinan

Mrs. Angelita M. Reyes
Cubao Elementary School
Quezon City

Mrs. Eloisa Ruste
Zamboanga City High School

Miss Marita Sablad
Bangod Elementary School
Bangod, Pinabacdao, Samar

Mrs. Preciosa Santos
Magallanes Central Elementary School
Davao City

Miss Encarnacio Taclawan
La Paz Elementary School
La Paz, Abra

Carlito Taeza
Iging Barrio High School
Iging, Cagayan

Miss Edna Tan
Talisay Elementary School
Talisay, Cebu

Miss Eleanor Tan
Xavier Elementary School
Cagayan de Oro City

Leonides Tuaño
Holy Family Academy
Angeles City

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POPULATION
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Established to serve as a resource institution for population and family planning activities in the private and public sectors.

The POPULATION CENTER FOUNDATION (PCF) is a private grant-making institution set up in 1972 to increase the involvement of the private sector in the country's effort to bring about timely and effective solutions to its population problem.

To support and complement the National Population Program, the Foundation stimulates alternative means towards national population goals; supports the development of new schemes that more fully integrate population with such fields as nutrition, human settlements, environment, and social welfare; and secures the increasing participation of the private sector in all these areas. Toward these ends it has developed four major programs: Program of Assistance to Innovative Projects, aimed primarily at enhancing the efficiency and effectiveness of present population program activities; Information and Research Utilization Program, aimed at upgrading the competence of the personnel implementing population activities; Technical Assistance Program, aimed at strengthening the institutions implementing population program activities; and Research Program, aimed at expanding the knowledge base needed to upgrade performance, individual competence, and institutional capabilities.

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